

Reporting of Health Promotion Research: Addressing the Quality Gaps in Iran

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ABSTRACT

Quality of health behavior research determines usefulness of the findings for application. The authors individually scrutinized quality of a representative sample of abstracts (n=315) submitted to the 1st International and 4th National Congress on Health Education and Promotion, held in Tabriz, Iran on 16-19 May, 2011. Among the assessed abstracts, introduction section had the standard format in 18.1% (CI: 14.2-22.7%), sampling method and sample size were concurrently explained in 56.3% (CI: 50.3-62.1%), and the data in 40.6% (CI: 35.4-46.1%) were insufficient to support the conclusion section. The observed heterogeneity in the quality of Iranian research may reflect gaps in research methodology education. Revision in the current research performance is recommended to ensure a more stringent national research output.

Keywords: Research performance, Behavioral science, Health promotion, Iran

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Introduction

The research paradigms upon which public health studies are based reflect the complexities of most health problems. Rapid increase in the volume of scientific literature in this field has focused attention to the quality of research evidence worldwide. This is while a mounting body of current literature indicates that not all health studies carry the same credibility to be used as empirical evidence for decision-making [1-5]. There is now an international policy mandate to adopt quality standards for health research in synchrony with the multidisciplinary nature of the field of public health [3, 6]. To enhance the rigor and applicability of research findings, adherence to standard publication guidelines is needed.

Academic institutions in Iran receive funding from the government for their research activities. Evaluation of research qualities is an increasingly important task for funding bodies in the area of public health and can help to optimize and rationalize resource allocation; thus, enhancing national research productivity [7]. To the best of our knowledge, there is no prior evaluative study on health research quality in Iran and this is the first article raising the issue of quality in the Iranian health studies.

Our objective was to evaluate the extent and quality of the submitted abstracts to the 1st International and 4th National Congress on Health Education and Promotion, held on 16-19 May 2011, in Tabriz, Iran.

Our special focus was on the accuracy of applied methodology as well as the validity of conclusions.

Material and Methods

We included retrospective, cross-sectional, and prospective observational studies, along with randomized trials, but excluded qualitative research. A qualitative assessment was done based on the procedure adapted from the explained criteria by Shamliyan et al., [8], in which the definition of external validity was based on assessment of sampling bias with attention to the reported sampling frame, sampling method, sample size, and response rate in the research publications so that the results may be generalized to the population. The authors also provided internal validity criteria, which included psychometric properties of the instrumentation and frequency of outcome variables with their precision.

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [9] were also applied for assessing systematic review of the articles. Assessment of trials' quality was based on Consolidated Standards of Reporting Trials (CONSORT) [10]. To do so, checklists, consisting of internal and external validity criteria to assess quality of a representative sample of abstracts (n=315) selected from 1735 submitted research findings were created.

We first incorporated overall reporting quality of the abstracts based on the structural analysis of introduction, method, results, discussion, and conclusion sections. Information relevant to the methodological quality of the studies included the aim and design of study, sampling strategy, participation rate, and study subjects flow. Other extracted data included the operational definition, measurement, and reporting of the outcome measures. Authors independently scrutinized the abstracts for the quality criteria and any disagreement was resolved with consensus. Relative frequency of abstracts, based on the type of study they were representing, as well as precision in fulfilling the

intended quality criteria were estimated, using version 2.2 of Confidence Interval Analysis (CIA) software, to report the effects of sampling variation on the estimated proportions.

Results

Among the retrieved abstracts, 85.7% (n=270) (CI: 81.4-89.1%) were findings of original works and 14.3% (n=45) (CI: 10.9-18.6%) were summaries of previously published articles. In the latter group, 11.1% (n=5) (CI: 4.8-23.5%) of abstracts were described as reports of systematic reviews and remaining were narrative reviews.

The introduction section of only 18.1% (n=57) (CI: 14.2-22.7%) of the reviewed abstracts had systematically reflected the importance of the study subjects, important findings from previous works, and main aim of the study. In 7.3% (n=23) (CI: 4.9-10.7%) of the selected abstracts, none of the abovementioned details were given by the author(s). Amongst the remaining abstracts, in 74.6% (n=235) (CI: 69.5-79.1%), one or two parts of the required information were not provided in the introduction section.

Sampling method and sample size were both explained in 56.3% (n=152) (CI: 50.3-62.1%) of the abstracts from original studies, while in 10.7% (n=29) (CI: 7.6-15.0%), none of these required details were provided, where applicable.

Study variables were reported in 55.2% (n=149) (CI: 49.2-61.0%) and study design in 69.3% (n=187) (CI: 63.5-74.5%) of the abstracts from original studies. Name of the statistical software, without quoting to the statistical analysis method, was reported in the findings of 25.9% (n=70) (CI: 21.1-31.5%) of the original research studies. Participation rate, as an index of external validity, was reported in only 4.8% (n=13) (CI: 2.8-8.1%) of the abstracts representing original studies. Descriptive statistics were used to present findings of original studies in 67.3% (n=181) (CI: 61.2-72.4%) of cases. The level of statistical significance was included in 44.4% (n=120) (CI: 38.6-50.4%)

of the abstracts from original studies without providing its precision, where applicable.

In the systematic review of the articles (n=5), PRISMA statement was followed in only one of the submitted works. Among the narrative reviews (n=40), in only 15.0% (n=6) (CI: 7.1-29.1%) of the cases findings were provided quantitatively and in only 20.0% (n=8) (CI: 10.5-34.8%), abstracts included general conclusion from the reviewed papers (Table 1).

The data in 40.6% (n=128) (CI: 35.4-46.1%) of all evaluated abstracts were insufficient to support the claims in the conclusion section. Less than 20% of the evaluated abstracts had acceptable quality criteria in the introduction and method sections, and in only 60% of the abstracts, the quality of reporting the results and discussion was scientifically reasonable (Table 2).

Table 1: Quality of Narrative Reviews in the Iranian Public Health Studies

Quality criteria	n	%
Introduced reviewed articles	9	22.5
Given criteria to choose an article for review	1	2.5
Quality assessment of included article	0	0
Number of articles reviewed	1	2.5
Summarized findings	5	12.5
Use of quantitative measures to report findings	6	15.0
Provided general conclusion	8	20.0
Lacking all of the quality criteria	10	25.0
n=40		

Table 2: Overall quality of abstracts submitted to the 1st International and 4th National Congress on Health Education and Promotion, Tabriz, Iran, 16-19 May 2011

Quality criteria	n	%
Reasonable introduction	57	18.1
Clear methodology	48	15.2
Quantitatively described findings	181	57.5
Fair conclusion	187	59.4
n=315		

Discussion and Conclusions

Our study indicated varied reporting quality of studies submitted to the 1st International and 4th National Congress on Health Education and Promotion, which was held on 16-19 May 2011 in Tabriz, Iran. Narrative reviews were a considerable part of the research work assessed but their credibility to be used as research evidence is under question due to their poor quality. Only in a few abstracts, the researchers addressed a clearly focused public health issue.

Findings of the study showed that Iranian public health researchers did not properly follow the internationally agreed standards in reporting the results of their research studies. In a number of submitted articles, misleading claims or judgments were noted, which may suggest authors' unscientific approach to conducting and reporting original research.

To the best of our knowledge, this is the first study in Iran to compile quality criteria to evaluate abstracts submitted to a scientific event. Our study would be highly de-

sirable if we could have access to the full text of submitted abstracts in order to understand the rationale behind the applied methodology in the reviewed studies, thereby to enhance our judgment about the quality of research evidence.

Other studies on reporting quality of internationally published articles based on the standard quality criteria spotted almost same quality issues [11-19]. Quality assessment of submitted abstracts to a number of scientific meetings in other countries [20-23] also ended up with almost the same issues in reporting the quality of research findings.

All these results are focusing attentions on a world spread missing piece puzzle within the research reporting process.

These findings may reflect gaps in research methodology education, biases in research approaches, double standards in research ethics, or qualitative criteria of research performance. Some scholars in developing countries believe that it is not feasible to adopt all quality standards into research process due to a variety of reasons, such as the knowledge gap between developing and developed world. Thus, good quality research will depend on the research setting and availability of resources. None of these possibilities should be ruled out unless precise scientific evidence dismisses such speculations [24].

We did not screen the abstracts for duplicate presentations at other professional meetings. The quality of research report is not only related to the manner by which it is disseminated but also to its contribution to the science. In the study by Pop GH et al. [25], it was reported that at least one fifth of presented abstracts at the American Urological Association annual meeting were also presented elsewhere. We recommend assessment of research reports for potential misconduct in addition to the quality of reporting in any future study. Our key message is to address and understand all possible mechanisms, which may contribute to poor reporting quality of research findings and to its implications that may pose in the scientific world regardless of its contributory factors.

For Iranian researchers, improvement of the current research reporting quality is recommended to ensure a more stringent national research output, which will not be possible without setting and pervading scientific reporting quality criteria to all and specially young Iranian researchers.

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References

- [1] Simeria I, Moher D, Hoey J, Schulz KF, Altman DG. A catalogue of reporting guidelines for health research. *Eur J Clin Invest* 2010, 40, 35-53.
- [2] Moher D, Simeria I, Schulz KF, Hoey J, Altman DG. Helping editors, peer reviewers and authors improve the clarity, completeness and transparency of reporting health research. *BMC Med* 2008, 6, 1-3.
- [3] Green LW, Glasgow RE. Evaluating the relevance, generalization, and applicability of research: issues in external validation and translation methodology. *Eval Health Prof* 2006, 29, 126-153.
- [4] Baker EA, Brennan LK, Claus JM, Land G. Translating and disseminating research- and practice-based criteria to support evidence-based intervention planning. *J Public Health Manag Pract* 2008, 14, 124-130.
- [5] Altman DG. Poor-quality medical research: what can journals do? *JAMA* 2002, 287, 2765-7.
- [6] Glasziou P, Vandembroucke J, Chalmers I. Assessing the quality of research. *BMJ* 2004, 328, 7430-7439.
- [7] Moed HF. New developments in the use of citation analysis in research evaluation. *Arch Immunol Ther Exp* 2009, 57, 13-18.
- [8] Shamliyan TA. *Development of quality criteria to evaluate non-therapeutic studies of inci-*

- dence, prevalence, or risk factors of chronic diseases: pilot Study of new checklists. Available online: <http://www.ncbi.nlm.nih.gov/books/NBK53272/pdf/TOC.pdf> (accessed on 18 June 2011).
- [9] Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Ann Intern Med* 2009, 151, 264-269.
- [10] Moher D, Schulz KF, Altman DG. The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomised trials. *Lancet* 2001, 357, 1191-1194.
- [11] Al-Namankany AA, Ashley P, Moles DR, Parekh S. Assessment of the quality of reporting of randomized clinical trials in paediatric dentistry journals. *Int J Paediatr Dent* 2009, 19, 318-324.
- [12] He J, Du L, Liu G, Fu J, He X, Yu J, Shang L. Quality assessment of reporting of randomization, allocation concealment, and blinding in traditional Chinese medicine RCTs: A review of 3159 RCTs identified from 260 systematic reviews. *Trials* 2011, 12, 122.
- [13] Selman TJ, Morris RK, Zamora J, Khan KS. The quality of reporting of primary test accuracy studies in obstetrics and gynaecology: application of the STARD criteria. *BMC Womens Health* 2011, 11, 8.
- [14] Cook DA, Levinson AJ, Garside S, Garside S. Method and reporting quality in health professions education research: a systematic review. *Med Educ* 2011, 45, 227-38.
- [15] Cook DA, Beckman TJ, Bordage G. Quality of reporting of experimental studies in medical education: a systematic review. *Med Educ* 2007, 41, 737-745.
- [16] Wang G, Mao B, Xiong ZY, Fan T, Chen XD, Wang L, Liu GJ, Liu J, Guo J, Chang J, Wu TX, Li TQ. The quality of reporting of randomized controlled trials of traditional Chinese medicine: a survey of 13 randomly selected journals from mainland China. *Clin Ther* 2007, 29, 1456-1467.
- [17] Chung M, Balk EM, Raman G, Yu WW, Trikalinos TA, Lichtenstein AH, Yetley EA, Lau J. Reporting of systematic reviews of micronutrients and health: a critical appraisal. *Am J Clin Nutr* 2009, 89, 1099-1113.
- [18] Moher D, Tetzlaff J, Tricco AC, Sampson M, Altman DG. Epidemiology and reporting characteristics of systematic reviews. *PLoS Med* 2007, 4, e78.
- [19] Langan S, Schmitt J, Coenraads PJ, Svensson A, Elm E, Williams H. The reporting of observational research studies in dermatology journals: a literature-based study. *Arch Dermatol* 2010, 146, 534-541.
- [20] Hopewell S, Clarke M. Abstracts presented at the American Society of Clinical Oncology conference: how completely are trials reported? *Clin Trials* 2005, 2, 265-268.
- [21] Wang L, Li Y, Li J, Zhang M, Xu L, Yuan W, Wang G, Hopewell S. Quality of reporting of trial abstracts needs to be improved: using the CONSORT for abstracts to assess the four leading Chinese medical journals of traditional Chinese medicine. *Trials* 2010, 11, 75.
- [22] Turpen RM, Fesperman SF, Smith WA, Vieweg J, Dahm P. Reporting quality and information consistency of randomized, controlled trials presented as abstracts at the American Urological Association annual meetings. *J Urol* 2010, 184, 249-253.
- [23] Fesperman SF, West CS, Bischoff CJ, Algood CB, Vieweg J, Dahm P. Study characteristics of abstracts presented at the annual meetings of the southeastern section of the American Urological Association (1996-2005). *J Urol* 2008, 179, 667-671.
- [24] Shaghghi A. *Are there double research ethics standards for developing countries?* Available online: <http://www.bmj.com/content/342/bmj.d2496/reply> (accessed on 24 September 2011).
- [25] Pop GH, Fesperman SF, Ball DA, Yeung LL, Vieweg J, Dahm P. Duplicate presentations on prostate cancer at American Urological Association and European Association of Urology annual meetings. *J Urol* 2009, 182, 674-678.