

ORL, head & neck surgery historical research papers: suggestion of a six points quality scale

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Abstract:

Objectives/Hypothesis: Otorhinolaryngology, head & neck surgery historical research papers are uncommon and of varied quality. Structured guidelines are desirable to carry out and report such studies.

Methodology: Study of the methodology used in some recent otorhinolaryngology, head & neck surgery historical research papers completed with discussion during the 9th meeting of the International Society of History of Otorhinolaryngology at Heidelberg in 2015.

Results: Six guidelines have been suggested. These are: originality, reliance on primary critically treated sources, methodology with limitations and bias, context dependence, interpretation and historical merit, and impact on everyday practice.

Conclusion: These guidelines should aid authors, reviewers and editors to promote the quality of an otorhinolaryngology, head & neck surgery historical research paper and consequently increase the possibility of being published in high level otorhinolaryngology, head & neck surgery journals.

Keywords: history, otorhinolaryngology, head & neck surgery, methodology, scale

Introduction

Medical historical research involves finding, using, interpreting and correlating information within primary and secondary sources, in order to understand past events and their influence on everyday practice. Otorhinolaryngology, Head and Neck surgery historical research papers (OHNSHx) are uncommon in the largely diffused medical literature and of various levels of quality. The decision to publish or not an OHNSHx is usually related, to the space limitations in the journal, and based on the priority of each paper. Additional reasons for rejection are the quality and risk of inaccuracies of some submitted papers⁽¹⁾, the absence of a set of criteria as found in the medical literature to assess scientific papers, the difficulty of finding reviewers also trained in historical methodology, and the absence of confidence

about the importance of historical research in OHNSHx⁽²⁾. Different recent OHNSHx demonstrate this and brings about the need to formulate a structured quality scale of criteria (QSC). This QSC would be the basis to conduct and write OHNSHx. A 2014 pilot study by Kelly & Watson presented a 5 points quality scale for medical historical research papers⁽³⁾. These 5 points are summarized as: originality and new material, critical treatment of sources, presence of bias, acknowledgment of historical context and ethical issues in contemporary history. A PubMed search did not find any other applicable scales.

This report will amplify six aspects of guidelines for QSC formulated during the 9th meeting of the International Society of History of Otorhinolaryngology at Heidelberg, Germany in September 2015.

The 6 guidelines for QSC were first arrived through a comparative application of the Kelly & Watson scale in two recently and pertinent OHNSHx, one about the origin of

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	<u>Clar's mirror</u>	<u>Head & neck cancer</u>
<u>Originality</u>	<u>yes</u>	<u>no</u>
<u>Sources</u>	<u>(yes)</u>	<u>no</u>
<u>Bias</u>	<u>no</u>	<u>no</u>
<u>Context</u>	<u>no</u>	<u>yes</u>
<u>Ethics</u>	<u>n/a</u>	<u>n/a</u>

Fig. 1. Kelly & Watson scale in Clar's mirror and head & neck cancers papers

1. Originality and new material
2. Reliance on primary critically treated sources
3. Methodology with limitations and bias
4. Context dependence
5. Interpretation and historical merit
6. Impact on every day practice

Fig. 2: 6 points suggested DSC for OHNSHx

	<u>pharyngeal pouch</u>	<u>sentinel node</u>
<u>Originality</u>	<u>yes</u>	<u>yes</u>
<u>Sources</u>	<u>(yes)</u>	<u>(yes)</u>
<u>Methodology</u>	<u>no</u>	<u>no</u>
<u>Context</u>	<u>no</u>	<u>(yes)</u>
<u>Interpretation</u>	<u>yes</u>	<u>yes</u>
<u>Day practice</u>	<u>yes</u>	<u>yes</u>

Fig. 3. 6 points QSC in the papers pharyngeal pouch and sentinel node

Clar's mirror⁽⁴⁾ and a second concerning the history of head and neck cancers in the ancient world⁽⁵⁾ (*Table 1, p.184*). This comparative application highlighted various historical insufficiencies in these two papers which lead to inaccuracies and the publication of another paper about the origin of Clar's mirror⁽⁶⁾ and a letter to the editor for the second paper⁽⁷⁾. The main limitation of this first approach is the limited number of chosen papers, even if they are quite sufficient to demonstrate the problem. The working document of QSC was then sent to the discussion participants to review and comment based upon their experience as authors, reviewers and editors of journals publishing OHNSHx to validate the proposal. The six criteria of this QSC are: originality and new material, reliance on primary sources, methodology with limitations and bias, context dependence, interpretation and historical merit, and impact on every day practice (*Table 2, p.184*). This suggested scale was then applied to two other specifically chosen recent papers, one about the history of the pharyngeal pouch⁽⁸⁾ and another about the history of sentinel node biopsy in head and neck cancer⁽⁹⁾ (*Table 3, p.184*). It showed to be more appropriate and relevant for OHNSHx and encouraged the participants to propose this QSC for future research. These six criteria are presented here in detail.

Originality and new material

It is a longstanding and commonly accepted practice of scientific publishing not to accept for publication research that has been previously published⁽¹⁰⁾. Originality means "the quality or state of being authentic or genuine [...] the power of independent thought or perception: capacity for constructive imagination or significant innovation [...] novelty in the form of expression rather than in subject matter."⁽¹¹⁾ Originality also involves the quality of contribution: is the research worth conducting? It must be new to the medical literature, or at least new to a particular audience. It may also expand on, or confirm, a previously published study⁽¹²⁾. In other words, original studies can be of unknown sources or material, new questions about a known subject, and new answers or interpretation regarding an already discussed topic. An extensive search of the literature is then mandatory to find out if the intended research will correspond to this first criterion. This search must not be limited to English

language, Web publication, and PubMed, but expanded to other resources and other languages, notably German and French, because English became the referenced OHNSHx language only in the mid-20th century.

Reliance on primary critically treated sources

Historical research in otorhinolaryngology, head and neck surgery, like all other historical research, in that the information lies within medical literature and the author must determine how this knowledge was formulated and expressed. Primary sources, such as writings (notably papers, theses, books, letters, diaries, catalogues, registers, etc.), illustrations, instruments, human remains, molds and preparations, artistic objects and others are the basic factual documents in history⁽¹³⁾. The historian's task is to assemble a sufficient number of facts, based on these valid original documents. History takes shape from these and can then be discussed and interpreted. Several of these relevant sources can be used to study a particular question. Specific original writings are first in line, but general epoch-making otorhinolaryngology, head and neck surgery books are important to study as they give an overview of the otorhinolaryngology, head and neck surgery knowledge at a particular point in time. The research of other primary sources is often more difficult, as most are not systematically referenced. This search can be time consuming, notably when the requested material is in museums, libraries, institutes for history of medicine, unclassified archives of hospitals, or private collections. This material, instruments for example, is often not clearly described as no specialist has catalogued them. Each original used source must then be referenced, with the page for a book or the description of an iconographic document. The secondary written references can only be used for preparing and discussing the subject as the initial step of research of the already known primary sources and must be clearly separated in the study. The regular use of secondary and compiled references in place of original primary references is associated with many biases and inaccuracies⁽¹⁴⁾, which then can be reported and perpetuated⁽¹⁵⁾. The collected material must be credible and reliable for it to be used in a historical report, i.e., primary sources must be critically evaluated and studied, with

a focus on their authority, accuracy, and currency⁽¹⁶⁾.

Methodology with limitations and bias

Each scientific or historical research must be based on a solid methodology. Methodology, “which deals with the principles of procedure in research and study”⁽¹⁷⁾, particularly refers to “a body of methods, procedures, working concepts, rules, and postulates employed by a science, art, or discipline [...] the processes, techniques, or approaches employed in the solution of a problem or in doing something [...] a branch of logic that analyzes the principles or procedures that should guide inquiry in a particular field.”⁽¹⁸⁾ At the beginning of the 1970’s⁽¹⁹⁾, a new approach to history appeared which asserted that scientific and intellectual methods were superior to philosophical choices and historical documents. The historian is to form and put forward hypotheses which, after verification, he or she will amend accordingly. It is considered that there are no historical facts as such; it is sufficient to find the relevant documents and relate them to other evidence to build up a natural chronological succession of events. Creating an OHNSHx requires that functioning and contextualizing be methodologically analyzed, to the detriment of the pure description of facts⁽²⁰⁾. Unfortunately, the best methodology does not ensure the best quality and grading papers mainly on methodology can lead to some misinterpretations⁽²¹⁾. Limitations and bias are important to understand for placing research finding in context, interpreting the validity of the scientific world, and ascribing a credibility level to the conclusions of published research⁽²²⁾. Limitations are often related to researcher choices and preferences and bias are often related to incomplete or questionable data sources. Usual OHNSHx methodology is summarized as: “finding a question and imagining a tentative answer”, or in other words, it is an argumented hypothetico-deductive method of research. Two factors are important to the shaping of the research: the first is the claim or purpose which must be clearly defined. Is it a description, an explanation, an argumentation, a persuasion of something, or other? The second factor is the targeted audience.

Context dependence

The significance of a document essentially depends on the extent to which it is situated in its epoch-making context, but also in the context of its narrative⁽²³⁾. “The interrelated conditions in which something exists or occurs”⁽²⁴⁾ is defined as context or environment. To create an OHNSHx, the researcher has an explicit objective to explore, understand, and present the context within which the events of his/her study lies and to explain the influence of that context. The study of the context is an integral part of analyzing the various primary sources and collected facts. It is not always easy to achieve because most historical phenomena exist within multiple contexts, each of which may be vastly complex. Describing and explaining the context of a historical study can be at the least daunting and at the worst impossible. The solution is first careful formulation of a research purpose⁽²⁵⁾, as already mentioned, which will delimit the context. Sometimes the answer to a specific question will be found only in the context and not in the collected primary facts themselves. On the other hand, context has also its own limits, and must be critically studied.

Interpretation and historical merit

The vivifying principle of history is interpretation, which also gives a definitive viewpoint to the historical research⁽²⁶⁾, and its historical merit. Originality and soundness of the interpretation are the key points to support the defined purpose. OHNSHx is of utility only to the extent that it has been interpreted for use by the researcher. OHNSHx is incomplete if the researcher does not provide an interpretation regardless of choice of the basic historical approach, the tools used in gathering and analyzing data, the establishment of a valid chronology of events, or the level of detail provided in descriptions of events. The basic question to be answered is: what do the data mean? Reasoning based on evidence is not the only way to reach a sound conclusion; sometimes it is not even the best way. Intuition, feelings, and spiritual insight can also bring evidence for readers to evaluate⁽²⁷⁾. In this situation, it is essential to demonstrate and explain the intellectual construction of the interpretation with a solid argument that the reader can accept on faith, a criterion that thoughtful readers rarely grant. As it is usually impossible to be sure to

have studied all the possible primary sources, the successful accumulation of some relevant facts can finally lead the researcher to a sufficient index of correspondence, or an acceptable degree of probability, to construct his or her interpretation. The nature of historical interpretation is such that multiple interpretations not only are viable, but are typically considered healthy. Few historical analyses can ever be considered the last word on the topic.

Impact on every day practice

Historical research has an inextricable link to understanding what actually happened and assessing the implications. Medicine is confirmed by its own historical development, progressively accumulated on a cumulative historical mode of knowing⁽²⁸⁾. New or modified ideas and facts regularly appear, usually depending on each other in a form of constructive continuity. Every day otorhinolaryngology, head and neck surgery practice contains such examples, with the production of events considered and promoted as new but in reality, and unknown to the researcher, already presented and discussed in the “old” literature. Only a well conducted OHNSHx will be able to find out the premises and first developments of these events and their problems and shortcomings. OHNSHx can explain and fix an unclear point, open the discussion to reconsider a surgical technique, direct a new direction in fundamental research, and learn from the mistakes of the past so as to avoid repeating them. To study history of otorhinolaryngology, head and neck surgery is to look back and analyze prior facts and experience⁽²⁹⁾. The medical profession of today lives too exclusively in the contemplation of the so-called modern discoveries, and fails to realize the value and the work behind these modern discoveries, most of them being impossible without their pioneers and predecessors, i.e. OHNSHx. To study history means to look back and analyze prior fact and experience, thus meaning that without history, there are no retrospective studies, no evidence based medicine and no guidelines.

Conclusion

The writing of an OHNSHx demands as much time, precision and seriousness as any scientific account. Currently major decisions about how research is done is often

based on convention and inertia rather than being highly imaginative or evidence-based (30). The six criteria of QSC will allow authors, reviewers and editors to have a consistent methodology to create and evaluate the quality of an OHNSHx. This will enhance the acceptance of quality papers in the otorhinolaryngology, head and neck surgery journals. Its acceptance for future use will depend upon its efficacy.

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