



Recommended standards for conducting and reporting ethnopharmacological field studies



Caroline S. Weckerle^a, Hugo J. de Boer^{b,c}, Rajindra K. Puri^d, Tinde van Andel^{e,f},
Rainer W. Bussmann^g, Marco Leonti^{h,*}

^a Institute of Systematic and Evolutionary Botany, University of Zürich, 8008 Zürich, Switzerland

^b Natural History Museum, University of Oslo, 0318 Oslo, Norway

^c Department of Organismal Biology, Uppsala University, Uppsala, Sweden

^d Centre for Biocultural Diversity, School of Anthropology and Conservation, University of Kent, Canterbury CT2 7NR, United Kingdom

^e Naturalis Biodiversity Center, Darwinweg 2, 2333 CR Leiden, The Netherlands

^f Wageningen University and Research, Wageningen, The Netherlands

^g William L. Brown Center, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299, USA

^h Department of Biomedical Sciences, University of Cagliari, Via Ospedale 72, 09124 Cagliari, Italy

ARTICLE INFO

Keywords:

Methods

Ethnobotany

Ethnopharmacology

Standards

Field research

Traditional medicine

ABSTRACT

Ethnopharmacological relevance: What are the minimum methodological and conceptual requirements for an ethnopharmacological field study? How can the results of ethnopharmacological field studies be reported so that researchers with different backgrounds can draw on the results and develop new research questions and projects? And how should these field data be presented to get accepted in a scientific journal such as the Journal of Ethnopharmacology? The objective of this commentary is to create a reference that covers the basic standards necessary during planning, conducting and reporting of field research.

Materials and methods: We focus on conducting and reporting ethnopharmacological field studies on medicinal plants or *materia medica* and associated knowledge of a specific people or region.

The article highlights the most frequent problems and pitfalls, and draws on published literature, fieldwork experience, and extensive insights from peer-review of field studies.

Results: Research needs to be ethical and legal, and follow local and national regulations. Primary ethnopharmacological field data need to be collected and presented in a transparent and comprehensible way. In short this includes: 1) Relevant and concise research questions, 2) Thorough literature study encompassing all available information on the study site from different disciplines, 3) Appropriate methods to answer the research questions, 4) Proper plant use documentation, unambiguously linked to voucher specimens, and 5) Qualitative and quantitative analyses of the collected data, the latter relying on use-reports as basic units.

Conclusion: Although not exhaustive, we provide an overview of the necessary main issues to consider for field research and data reporting including a list of minimal standards and recommendations for best practices. For methodological details and how to correctly apply specific methods, we refer to further reading of suggested textbooks and methods manuals.

1. Introduction

In spite of the Journal of Ethnopharmacology (JEP) having established the “Rules of 5”: (https://www.elsevier.com/__data/promis_misc/jeprulesof5.pdf) as well as a journal checklist to be completed upon submission (https://www.elsevier.com/__data/promis_misc/JEP_AuthorChecklist.pdf), which should help to guarantee a minimum standard of the submitted studies, from a

reviewers’ perspective, too many manuscripts are rejected because they lack minimal standards of field research and data presentation. This is a regrettable situation considering the time spent by researchers and the potentially valuable data being lost.

With respect to field studies, the Rules of 5 state that “ethnopharmacological and ethnobotanical surveys normally need to report primary (absolute) data reporting how many times a (botanical) drug has been cited for a certain use and application”. The journal checklist

* Corresponding author.

E-mail addresses: marcoleonti@netscape.net, mleonti@unica.it (M. Leonti).

<http://dx.doi.org/10.1016/j.jep.2017.08.018>

Received 21 April 2017; Received in revised form 20 July 2017; Accepted 12 August 2017

Available online 20 August 2017

0378-8741/© 2017 Elsevier B.V. All rights reserved.

additionally asks: “Have you provided absolute/primary data on the frequency of plant use as mentioned in the interviews? And is there a critical assessment of the traditional uses considering regional and global uses and known scientific information on the chemistry and biological effects?” and “Have you provided full botanical plant names, including authorities of all plants?”.

The objective of this commentary is to create a reference explaining the rules of 5 in more detail concluding with bullet points in the form of “minimal standards” and “recommendations” addressing some of the more frequent issues encountered in submitted manuscripts. It is not intended as a methods manual, but rather to communicate lessons learned by a group of researchers and insights obtained by acting as referees to pinpoint potential pitfalls during planning, conducting and analysing field research. While complementary to the consensus statement on ethnopharmacological field studies (ConSEFS) (see Heinrich et al., 2017) this article is more specific to the requirements of the Journal of Ethnopharmacology and goes more into details.

In addition to key texts in research methods (e.g., Bernard, 2011; Newing, 2011) various ethnobotany methods manuals are available that can be consulted (e.g., Martin, 1995; Alexiades, 1996; Cotton, 1996; Cunningham, 2001). Also several influential papers have been published on standards in the field of ethnopharmacology (Berlin and Berlin, 2005; McClatchey, 2006; Gertsch, 2009; Heinrich et al., 2009) and many good examples of published field research exist.

2. Why do research?

Often, the expressed rationale for ethnopharmacological studies is that no previous research has been conducted in a specific location or among those specific people. This is a valid argument that satisfies a curiosity-driven need to document traditional knowledge. However, such a rationale should at least specify why this area or those people are of interest and relevant for the specific research question. Studies should not only be descriptive, but rather address specific research questions and testable hypotheses, and contribute to disciplinary debates and conceptual frameworks that can advance the field and relate to contemporary issues in both scientific and public spheres (see also Heinrich et al., 2009).

Similar critiques can be raised of another common rationale for ethnopharmacological research, given in both rejected and accepted papers, that “80% of the people in developing countries use traditional medicine as their primary source of healthcare”. Apart from the fact that this statement is unsubstantiated,¹ such a general proposition can only justify research to test its claim, or perhaps underpin a generic disciplinary aim of studies of traditional medicine, but otherwise offers no theoretical motivation for any particular ethnopharmacological study.

Frequently, studies refer to the need to document traditional herbal knowledge to foster local health care, save it for future generations, as well as for potential drug discovery. However, the paradigm that ethnopharmacological research is still of significant relevance to conventional drug discovery has been challenged (Gertsch, 2009). Several studies have pointed out the dynamic character of traditional medical knowledge, and argued that acculturation and globalization is not a priori detrimental but rather that amalgamation of traditional with new knowledge systems can help people to adapt to new realities. Ethnopharmacology should clearly address its significance for those outside the academic community and research should be based on a partnership with local participants. It is meaningful to consider together with the participants how ethnopharmacological studies can contribute to for example livelihood improvement and how useful

information can be exchanged (e.g., Jäger, 2005). Indeed, with the recent development of institutional codes of ethics, especially with regard to Free Prior Informed Consent (FPIC; e.g., ISE, 2006), and the requirements of both national research regulatory agencies and international agreements (e.g., Convention on Biological Diversity, 1992; CBD Nagoya Protocol on Access and Benefit Sharing, 2014), almost all field research in ethnopharmacology and ethnobotany must be supported by research agreements that specify means for dissemination of research results, outreach to participants, and even potential benefit sharing arrangements (e.g. Gamburg et al., 2012).

Based on the above, scholars in ethnopharmacology need to critically consider the importance of their research: Given the global base of conducted ethnopharmacological field studies, what kind of new information do we hope to retrieve? In which way are these studies going to contribute to the scientific understanding of traditional medicine and herbal drugs? How does our research contribute to cultural documentation and improve the livelihoods of local participants?

3. Research questions

All effective and significant research is guided by research questions that potentially provide answers that close gaps in knowledge. However, meaningful research questions and relevant ethnomedical information or quantitative analyses leading to the interpretation of the traditional health care situation are often lacking in the manuscripts submitted to JEP. On the other hand, the general push of journals for quantitative studies often results in the uncritical use of all kinds of indices.

While the guiding and inherent question of most ethnopharmacological field studies is “What plants do people use as medicine?” it would be important that contemporary research goes beyond this fundamental knowledge and develops additional questions or tests derived hypotheses. For instance, “Why is plant species X used for so many diseases? Why are so many plant species used for one particular disease?” In Sub-Saharan Africa, for example, one of the major use categories in the trade in herbal medicine (in both number of species and volumes sold) is female reproductive health (Van Andel et al., 2012; Towns et al., 2014). This observed phenomenon almost automatically leads to several hypotheses:

- 1) Women probably have limited access to modern medicine
- 2) Women prefer plants to treat reproductive ailments
- 3) Women need plants for certain aspects of reproductive health that modern medicine cannot offer them (e.g., abortifacients).

Such hypotheses can be tested by including questions about these subjects in interviews (for example, asking female customers for their motivation to use herbs) and by collecting data on national reproductive health statistics. In anthropological papers, one can retrieve information on the local aetiology of illnesses that are often treated with traditional medicine. In this way the data from ethnopharmacological surveys can be contextualized, which makes the research much more interesting to public health authorities and medical anthropologists than just a list of plants and their uses.

Research questions should be clearly and concisely written, focused on descriptive as well as explanatory objectives (e.g., *When do residents avoid government health clinics?*) that illuminate the relationships between concepts or categories associated with the topic of interest. Research questions are ultimately non-trivial if they lead to answers that contribute to knowledge production, advancement of the discipline, and/or solve problems, as discussed above. It is helpful to develop site selection criteria that set out the optimal characteristics desired for a particular location to pursue the research questions. This is especially important when planning comparative studies where it is necessary to control for variation in a limited number of variables among sites in order to test hypotheses.

¹ Attributed to the World Health Organization (WHO Fact Sheet 134 of 2003) but currently not being promoted in the latest Traditional Medicine Strategy of the WHO (WHO, 2013).

Download English Version:

<https://daneshyari.com/en/article/5555959>

Download Persian Version:

<https://daneshyari.com/article/5555959>

[Daneshyari.com](https://daneshyari.com)