

## Correspondence

## Recommendations for Future Articles on Knowledge, Attitudes and Practices in IJMS

## To the Editor,

The International Journal of Medical Students (IJMS) was created with the objective of sharing the scientific production and experiences of medical students and recently graduated physicians worldwide. As a scientific dissemination platform, it requires the material published to be of the highest quality.<sup>1</sup>

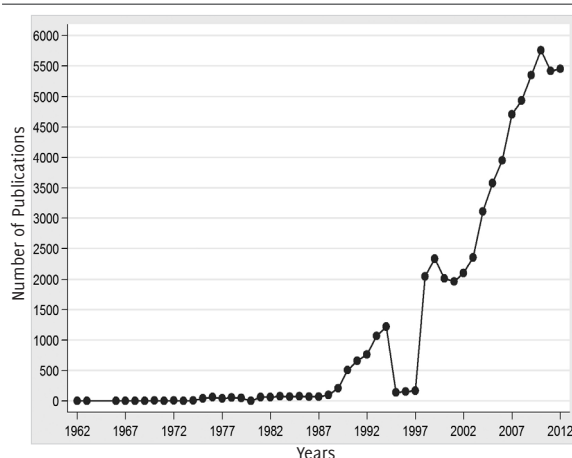
It is striking that the first two issues of the first volume of the journal each had an article with Knowledge, Attitude and Practices (KAP) in health methodology. This fact motivated the authors to write this letter to discuss some methodological issues about KAP studies, to present the evolution of this method as a scientific publication, and to discuss the main limitations of KAP studies recently published in IJMS.

KAP studies are based on a quantitative method that collects both quantitative and qualitative information. These type of articles can reveal characteristics of the knowledge, attitudes and behaviors of health factors relating them to religious, social and traditional factors and can expose some of the personal ideas that each individual has about a given condition.<sup>2</sup>

Furthermore, these types of studies provide a relatively simple study methodology ideal for medical students, in their initial phases of research training, to approach a problem from both a quantitative and qualitative perspective. This methodology offers an initial, wide perspective about a problem, uncovering opportunities for medical students for further research studies that can result in a positive impact on their community, while at the same time aiding in the development of skills as investigators in training.<sup>3,4</sup>

KAP studies have been evolving and their use has demonstrated an average increase of 105 published articles per year ( $R^2=68\%$ ,  $p < 0.00001$ ) in the period between 1961 and 2012 (Figure 1); however, if the analysis is restricted to encompass articles published from 1990 to 2012, publications have increased by 278 articles per year ( $R^2=88.9\%$ ,  $p < 0.0001$ ).

**Figure 1.** Number of Publications with Knowledge, Attitude and Practice methodology Published in PubMed® from 1962-2012



**Source:** PubMed, United States National Library of Medicine, National Institutes of Health. (Available from: <http://www.ncbi.nlm.nih.gov/pubmed/>, cited 2013 Sept 16) Using the keyword: "Health Knowledge, Attitudes, Practice" and timeline download option (Download Comma Separated Values, CSV).

however, if the analysis is restricted to encompass articles published from 1990 to 2012, publications have increased by 278 articles per year ( $R^2=88.9\%$ ,  $p < 0.0001$ ).

The growth of KAP articles when compared to Meta-Analysis has shown that they are less frequently used, albeit this difference is non-significant, with a median number of publications in all its history up to 2012 of 99 vs. 795 publications, respectively (Mann-Whitney test,  $p=0.08$ , KAP percentile 25 [p25]=41 and percentile 75 [p75]=2,048, and Meta-Analysis p25=371 and p75=2,332 publications). In contrast, KAP articles have a longer history, having their first publication in 1962, close to the year when the first Clinical Trial was published in 1961 and a few years before the first Meta-analysis was published in 1966 (Figure 2).

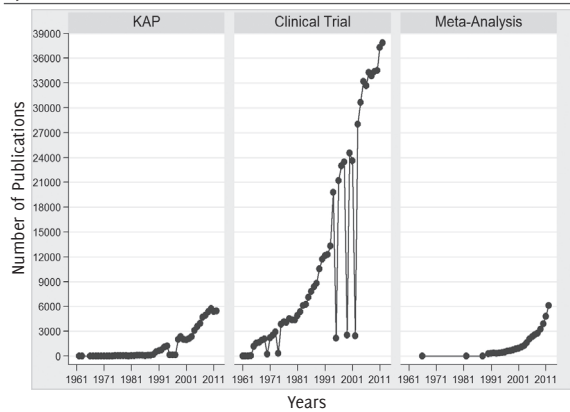
To properly design a KAP study, there are four recommendations that should be followed: (1) Development of a survey protocol, which should contain identification of the target population, calculation of sample size, sampling methods, questionnaire, adaptation of the answers, analysis plan, pretest questionnaire, construction of the data entry form, validation of questionnaire and validation of survey protocol; (2) Preparation of the survey, which should be adapted to the target population and should describe the schedule, materials, human resources and logistical needs and a pilot test of the survey; (3) Implementation of the survey including approval and consents, checking questionnaires, general supervision of the survey; and (4) Data analysis and preparation for publication.<sup>5</sup>

Sometimes authors overlook some of the above-mentioned 4 steps in developing a KAP study, or underestimate the importance of the research protocol and the criteria to select a research method and its systematic development while it is written.<sup>4</sup> Therefore if the purpose is to show relevant results from the public health perspective, it is imperative that investigators follow closely the described recommendations.

The IJMS has published two KAP articles in its first volume, the first one by Bonilla-Escobar FJ, with the title "Red Eye: Next Steps for Conducting Research in Knowledge, Attitude and Practice in Ophthalmology" in issue 1, and the second by Eissa AT, with the title "Knowledge, Attitudes and Practices towards Medication use among Health Care Students in King Saud University" in issue 2.<sup>6,7</sup> By following the described recommendations, the authors would like to point out some weaknesses found in these studies:

- Failure to show the calculation of the sample size and selection of the study population: This will tell the reader if the information presented is statistically relevant for a given delta, power and effect size and if the assumptions can be considered true for the study population (internal validity).<sup>8</sup>
- Failure to describe the sampling methods: This information is necessary to understand the generalizability of the study findings (external validity) and comprehend the analysis used.<sup>4</sup>
- Failure to state the objective, conclusions and recommendations of the study: These should be clearly stated, due to the impact that those studies can have in public health and

**Figure 2.** Number of Publications with Knowledge, Attitude and Practice methodology, Clinical Trials and Meta-Analysis Published in PubMed® from 1961-2012



**Abbreviations:** KAP, Knowledge, Attitude and Practice methodology studies. Source: PubMed, United States National Library of Medicine, National Institutes of Health. (Available from: <http://www.ncbi.nlm.nih.gov/pubmed/>, cited 2013 Sept 16) Using the keywords: "Meta-Analysis [Publication Type]", and "Clinical Trial [Publication Type]" and timeline download option (Download Comma Separated Values, CSV).

thus will facilitate the application of the results in their communities.<sup>3</sup>

- Failure to report the survey questionnaire used to collect the data: As this information will be useful for other researchers who may want to replicate the study in other conditions.

- Failure to describe if a pretest survey was performed: A pretest survey helps to identify if the instrument is measuring the construct (idea) that the researcher wants to measure, to recognize problems with the instrument and to adjust the questions to the population.<sup>9</sup>

KAP studies offer a good opportunity for medical students to conduct their first research studies; however, it is important to take into account the specific methodological requirements for

these types of studies. Guidelines in qualitative and quantitative methods are needed to improve the systematic design and reporting of KAP studies and facilitate the application of their findings to public health.

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