DENTAL RESEARCH IN PAKISTAN: ROOM FOR IMPROVEMENT

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INTRODUCTION

While it is heartening to see the improved aptitude for research in dentistry across the country in the recent past, there is always room for improvement.

Presented below is a commentary based on observations in the recent dental research proposals, write ups, and publications of Pakistani origin. A few key issues are outlined and each issue is then followed up with suggestions for improvement. These are based on the review of and discussion on several (20) reports of recent dental research (2010 to 2015) that the authors came across as part of their work in the past year.

The sampled reports are not identified partly because negative comments may impact publication chances as well as the repute of the people involved, and partly because these problems are not limited to the selected sample reviewed. But the main reason is that the aim here is to suggest options for bringing improvement, not assigning blame.

METHODOLOGY

One major issue is the lack of a good and justified match between aim and the methods used to achieve that aim. It is surprising to see aims of assessing effectiveness of X method of care with a one-time questionnaire survey in all who received X, when at least a before after design is warranted, if not that with a concurrent control. Similarly, cross sectional design is often followed by a convenient case series sampling.

ETHICS

Another major problem is ethics or rather the lack there of. It has been seen that researchers’ ethical compass is not always in line with the norms adhered to in the international circles. The problems range from not understanding informed consent and inappropriate comparison groups to wanting to test treatments that either have no lab based evidence of effectiveness or that contain potentially harmful agents.

This is serious and there can never be justification enough for an ethics review board to overlook any compromises on the interest of the patient in the slightest. The review boards must incorporate regular training of its members and ensure consumer (patient) representation amongst themselves to safeguard the interest of the participants.

The lack of awareness of civic rights among the masses is further conducive to poor ethical practices in the Pakistani context. However, we have a duty to impart enough information so that people can choose for themselves. This information provision is not limited to clinical trials but applies to all research involving humans. To correct this, medical ethics should be a major compulsory component in the pre-clinical years of the healthcare studies across the country. The Helsinki declaration should be taught. In addition, there is a need to develop consent rules, for example, who can give consent on behalf of an unconscious or under age patient in Pakistan, and in what order? The west has clear guidelines but since our social norms are different these may not always apply to us. These guidelines should be taught at dental colleges in preclinical years. Nevertheless, research sections of organizations such as Shaukat Khanum Hospital and Agha Khan University within the same country have managed to publish error free ethically appropriate research related to oral health.

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So, it may be as simple as following their lead and learning from their processes.

**LITERATURE APPRAISAL**

Often there are citations used to validate a point that the cited paper didn't make. As a non-English speaking people it is expected that researchers sometimes misunderstand, however, there must be checks in place at the beginning stages (proposal/ background) of a research project to prevent this. The role of a supervisor or internal referee is invaluable in preventing these errors.

Furthermore, courses and workshops on research interpretation are probably needed more than those on statistics that are all the rage. If one doesn't understand the difference between odds and risk ratio in practical terms, what use is being able to calculate either? In a recent course for post graduate dental students, none of the participants knew why odds ratios and not risk ratios were reported for the cancer studies. Neither could they differentiate between a reported RR 0.8 (95% CI 0.6 to 1.1) and RR 0.7 (96% CI 0.6 to 0.8), although some of them knew the definitions and formulae for calculation by heart.

Thus it is not about lack of statistical knowledge although it seems so. The issue is not having interpreted research by critical appraisal of papers.

**Sweeping Statements**

There are few who understand the need to pin a strong statement with a strong reference outside of results section. Assertiveness may be a wonderful quality in practice but in quantitative scientific research writing it is not. One shouldn’t say X causes Y for one because most times X may only be a risk factor for Y. Also, a statement of causal inference should cite a reference of a primary study that showed the causal effect.

Contrary statements are also seen. In one discussion, the authors first state that the prevalence was 8% for condition Z in Pakistan, and then state at the end of the same paragraph that the Z prevalence in Pakistan was found to be 48%. This could be presented more appropriately as a range that has been found in the country in different studies. Of course, what is further missing here is an argument as to why this variation is seen between two different studies (sample sizes, locations, populations, or outcomes studied). It should also be noted that Pakistan is diverse, so that an average value may only be true with large scale stratified surveys. So it is best to keep statements conservative.

**EDITORIAL STANDARDS**

All of the above issues could be weeded out at the editorial stage of a submitted report. The fact that these get published implies lax reviewing and editorial standards, even when neither can be concluded from a published report alone.

It is one thing to see incorrect language, where sentences don’t make sense sometimes. This can be fixed easily. One English literature graduate with an IELTS score 8 in reading hired for the journal’s copy editing should be enough. Of course resources need to be made available for such a position.

What is more disturbing is poor quality research sometimes getting published in even good quality local journals, possibly to fill space. The pressure to accept more papers on the editors of dental journals in Pakistan is understandable, but it does not exonerate them. The practice may even perpetuate the problem. Even if they cannot refuse publications, the editors can always be creative: instead of (or as complement to) making sections for reviews, original articles, and short communications the editorial board can decide to separate papers that fit international reporting guidelines such as CONSORT or STROBE. An alternative is to make adherence to reporting guidance mandatory for submission thus putting the onus on the writer. These guidelines are available at [http://www.equator-network.org/](http://www.equator-network.org/) along with other help.

**Inference**

In essence there are two broad areas needing improvement in dental research: the conduct, and the presentation. The responsibility for better conduct lies mostly with the teaching institutions where most research happens, and for presentation it lies jointly with the researchers and journals.

**Way Forward**

The problems noted above can be prevented and rooted out as outlined. It is hoped universities and journals find the suggestions useful, and that others in the field will come forward to suggest more solutions.
The ideal would be to take stock of all dental publications of the past decade to see trends and test the above observations. Such a project can identify solutions based on evidence but requires dedicated resources beyond the authors' reach currently.

What is imperative meanwhile is beginning a culture of critical appraisal of scientific literature within the dental colleges in the country in the form of journal clubs to enhance capacity for research and its interpretation.

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