



A step forward for Brazilian pediatric research

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Brazilian pediatric research appears to be healthy, or at least its ability to get published is improving. Two optimistic reports by Blank et al. contrast with the pessimism expressed in my home country of the United Kingdom. Last year *Jornal de Pediatria* reported that SciELO indexing had led to an increase in local submissions to the journal while MEDLINE indexing had resulted additionally in more foreign submissions.¹ This month we learn that there has been a fivefold increase in the number of Brazilian pediatric papers cited in MEDLINE from 1990 to 2004.²

Some years ago, *Archives of Disease in Childhood* published an anonymous annotation by a distinguished senior researcher in which he stated: "We see clinical pediatric research in the UK as being under threat. Ultimately this could affect the quality and nature of material submitted for publication."³ This gloomy prognostication may have come to fruition, as reported in a survey of the nation's 24 university pediatric departments. They reported a decline in numbers of academic staff. Half of the departments considered the Research Assessment Exercise (RAE) of the Higher Education Funding Council for England had contributed.⁴

Blank et al. state that, in Brazil, publication in indexed journals is a major criterion employed by the Federal Coordinating Agency for the Improvement of Higher Education (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – CAPES) to rank graduate programs. Could this be storing up a similar time bomb for Brazilian universities?

One reason for the apparent paradox that using a quality measure can lead to poorer quality is the nature of the impact factor (IF), used by funding organizations and government bodies to rank scientific output. The two papers published in *Jornal de Pediatria* draw attention to the arguments about the inadequacies of counting citations. Clever (or cunning) editors in many countries have devised methods to subvert the calculation of their journal IF by manipulating contributions so as to lower the denominator or by encouraging recent self-citation. Examples include publishing numerous editorials and letters which cite recent papers in the journal or redesignating short research papers as letters.^{5,6}

When Eugene Garfield devised IF, the aim was to find a reliable and reproducible way of ranking journals. It was not designed to measure the value of individual papers or to assess the quality of a research team – yet it is used in both these ways worldwide. I believe it corrupts rather than enhances the model of communication to which we should aspire. Surely any scientist's or clinician's aim is to draw the attention of his peers and colleagues to the work he or she has done so that there can be useful feedback. Ideally this should take the form of debating the validity of the findings; suggesting what further research could be done to elucidate the problem; even integrating the work into that of their own enquiries. Less altruistically but perhaps more realistically, being published in a high impact journal also increases an author's reputation, enhances his curriculum vitae (résumé), assists his eventual promotion and so increases his income.

But there is a cost. A senior obstetric academic tells me that his university demands that any paper he writes should be submitted first to the *New England Journal of Medicine* or *Lancet*, even when he knows the likelihood of acceptance is minimal, so all that happens is that the communication model is slowed down. Only when rejected is his paper allowed to slide gently down the slope of

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decreasing impact. The head of a UK postgraduate department referred to the national journal serving his department's specialty as 'A Mickey Mouse' journal; he was happy that his research fellows were readers but not authors. When I was editor of *Archives of Disease in Childhood*, I was puzzled by the lack of submissions from UK pediatric respirologists until I realized they preferred to submit their papers to *Thorax*, a higher impact journal also published by the BMJ Publishing Group. I thought their research should be read by practicing pediatricians, rather than chest physicians with mostly an adult practice. But the requirements of the RAE dictated that they must seek a higher IF, regardless of who might subsequently read their paper.

What this approach ignores is the fact that papers published in a high IF journal do not always achieve a high citation rate. This is particularly the case because of US domination of academic publishing with a recognized bias towards citing US papers. Other national interests may suffer as a result. For example, in 1989-93, taking into account the journals in which they were published, general medical papers from Turkey had an expected citation rate of 1.3 (relative to the world average). The actual rate was 0.3.⁷

Editors, of course, have answers. The obvious one is to work hard to increase their journal IF. Less obvious is for them to swallow their pride and publish brief extracts or commentaries on useful papers published elsewhere. The researchers are rewarded with points for the RAE (or CAPES) while the essential communication model of getting a message across to those who need to read it is satisfied. They can point to other useful indices, such as the 'hit rate' on their on-line papers or the total citations and half life, retrievable from Thompson Scientific through the subscription service "Web of Science." Some editors have suggested their journal, and therefore the research contained within it, should be judged on its influence. But how do we judge influence? Examples from the *BMJ* include an immediate and sustained decline in the use of 4.5% and 20% albumin in intensive care units following a critical systematic review; a reduction of about 40% in prescriptions for minocycline after a paper suggesting it should not be a first line treatment for acne was quoted on the front page of a popular daily newspaper; and reductions in pharmaceutical company share values following critical reports.⁸

Of course, before complaining about the dictatorship of the IF, it is as well to build the foundations of a healthy research community. If that means struggling to get into international journals, then national journal editors have to accept the inevitable, namely that they may lose their country's best research to others – in the same way that general journals compete against specialist journals. After all it should not stop them making their journals interesting

and entertaining while encouraging diligence and talent, especially amongst young researchers.

In that respect, Brazil is doing well. Figure 1 of the 2005 paper by Blank et al. shows a significant increase in submissions to *Jornal de Pediatria* since it was listed in SciELO and MEDLINE and a major jump in the number of submissions from foreign authors associated with the latter. The concomitant fall in the acceptance rate may be disappointing for some authors, especially young clinicians submitting case reports, but it represents quality improvement. Meanwhile, there has been a 404% absolute increase over 15 years of Brazilian pediatric papers cited in MEDLINE (compared with a 61% increase of all papers in this category).²

Blank et al. mention the lack of publication in high impact journals – but these are notoriously difficult to reach. As fewer original papers are published in the major international journals, those which overcome peer-review and editorial hurdles tend to be generously funded well-designed evidence-based randomized trials, meta-analyses and systematic reviews. Observational studies, cross-sectional data and case series do not get a look in.

Brazilian authors feature well, however, in some international journals with moderate IF. For example, from January 2001 to February 2006, the *BMJ* accepted 8 of 87 Brazilian papers. That may not seem many but the journal's acceptance rate for original papers is only about 7%. US and UK papers have higher acceptance rates (12.5% and 16.1%, respectively), but many of these are editorials, commentaries and other commissioned pieces which are intrinsically much less likely to be rejected. Restricting the process to pediatrics, the last 5 years have seen 42 Brazilian submissions to *Archives of Disease in Childhood*, of which four were accepted – lower than the journal's general original article acceptance rate of around 20%. These figures, generated by the journals' electronic manuscript tracking system, do not allow me to judge whether this is due to poor quality, editorial bias, the prejudice of peer reviewers or the perceived lack of relevance of the subject to a predominantly European and Antipodean readership. Rejected authors need to remember two facts: the editorial process contains many arbitrary steps. And life just isn't fair.

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Surface electromyography of facial muscles during natural and artificial feeding of infants: identification of differences between breast-, cup- and bottle-feeding

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The authors have chosen to study a topic that has not yet received adequate attention, but regarding which there are conflicting opinions. By their choice of method they have been able to provide an answer of clinical relevance to a previously unanswered question: Which alternative oral feeding method should be used for supplementation of breastfed infants?

According to current recommendations from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF),¹ health workers should protect, promote and support exclusive breastfeeding for 6 months and continued breastfeeding up to 2 years of age or beyond. However, exclusive breastfeeding is not an option for all infants for several reasons. Newborn infants who need supplementation for medical reasons and infants with partial breastfeeding require feeding by an alternative method. Because of the negative impact of feeding nipples on the development of infant sucking behavior and the deleterious impact of bottle feeding in hospital on mothers' subsequent choice of feeding method, the "Ten steps to successful breastfeeding" include step 9: "Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants."² The main reason for the "ban" on

bottle feeding is the assumption that it causes "nipple confusion": the infant will have difficulties in sucking on the mother's breast after having learnt to suck on an artificial nipple.

Cup feeding has been used for feeding infants and young children as far back in history as we have any insight. Presently, cup feeding is regarded in most settings as the superior alternative method for feeding infants in neonatal units. Already in 1987, a cup feeding policy feeding preterm infants in Kenya was presented.³ Similar policies were introduced in the UK^{4,5} and in South Africa.⁶ Research in India has demonstrated very early capacity for efficient cup feeding in very preterm infants.^{7,8} Preterm infants show more physiologic stability during cup feeding when compared with bottle feeding.⁹⁻¹¹ Preterm infants randomized to cup-feeding instead of bottle feeding were more likely to be discharged home with full breastfeeding.¹²

For supplementation of term infants in maternity units, opinions vary. No differences were noted in breastfeeding at discharge in a maternity unit in the UK in which babies were supplemented by cup or bottle.¹³ The authors concluded that at least these babies were not affected by nipple confusion. It should be noted that this was a retrospective uncontrolled study. A randomized trial also failed to find any differences in breastfeeding outcome depending on whether the infants were supplemented by cup or bottle.¹⁴ However, also term infants are more physiologically stable during cup feeding in comparison with bottle feeding.¹⁵

It appears that hesitation to use cups may partly be attributed to staff resistance to new procedures.¹⁶ A

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