

# A Six-Month Assessment of Medical News Reporting in Leading Local Newspapers in the Philippines: Is It Based on Good Evidence?

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## ABSTRACT

**Background.** Evidence-Based Medicine (EBM) has brought about a paradigm shift in medical practice. However, evidence in peer-reviewed medical journals is inaccessible to a lay person for whom the newspaper is the most accessible source of information. This study aims to determine if medical news articles (MNAs) in leading local newspapers in the Philippines are based on good evidence. **Objectives.** To characterize MNAs based on: (1) references cited and their level of evidence as appraised by authors and two independent EBM experts; (2) use of clinical outcomes; (3) mention of treatment benefit and potential harm in measurable terms; (4) mention of cost of treatment; and (5) disclosure of pharmaceutical industry support.

**Methods.** MNAs on non-surgical prevention and treatment of adult diseases from January to June 2002 in three leading local Philippine newspapers were appraised. MNAs on diagnosis, pediatric and surgical treatments, multiple treatment modalities, "Dear Doctor" or "Q&A" columns were excluded. References were assessed independently by two EBM experts; differences were resolved by consensus.

**Results.** The five conditions most frequently reported on were: diabetes, coronary heart disease, cancer, arthritis and hypertension. Of 113 MNAs, 94 (83%) cited references—54 were medical journal articles, 34 (63%) of which were based on good quality evidence. Out of the 94 MNAs, 51 (54%) reported clinical endpoints, 31 (33%) quantified benefit, 21 (22%) cited potential harm, 22 (23%) disclosed industry support, and 4 (4%) mentioned cost of treatment. None of the MNA authors mentioned critically appraising their references.

**Conclusion.** The 113 MNAs published in three leading local newspapers in the Philippines during the six-month period showed shortcomings in providing information to benefit the public. EBM awareness among journalists and studies covering a longer period and a broader line of the print media are recommended.

**Keywords:** EBM, print media, quality, medical news reporting, evidence, lay press

## Introduction

In recent years, the practice of evidence-based medicine (EBM) has brought about a paradigm shift in the approach

to medical practice. Through EBM, doctors are made aware of the soundness of evidence, and the strength of inference that it permits.<sup>1</sup> In the 1980s, teaching EBM was incorporated in residency training programs in North America; EBM was pioneered in the Philippines in 1998 in a government tertiary training hospital. The growing interest in evidence-based healthcare among patients and the general public cannot be ignored as well.

EBM posits certain guidelines on how medical literature published in journals can be assessed as to their level of evidence. Results of robust and well-designed randomized controlled trials (RCT) on the efficacy and harm of treatment are valued more highly and considered the best strategy to eliminate biases that produce misleading results, compared with observational, descriptive and other non-randomized studies. In cases where two or more RCTs are available, well-conducted systematic reviews provide the best evidence of efficacy. However, these studies are published in medical journals which are not read by the typical lay person who, after all, is the ultimate end-user and beneficiary of this information. The daily newspaper remains one of the most basic, most accessible, and least expensive sources of information on medical therapies that will improve their health or extend their lives.

In recent years, there has been widespread interest in a number of countries in the quality and accuracy of medical news reporting in the media.<sup>2-13</sup> However, as of yet, no local study in the Philippines has been done to determine if medical news articles (MNAs) published in leading local newspapers are in fact based on good evidence. This is the first attempt to evaluate medical news reporting in local newspapers based on quality of reference used, balanced reporting of potential harm and benefit, and cost.

It is the objective of this study to characterize MNAs on disease prevention and treatment published in leading local newspapers (particularly broadsheets) based on: (1) references cited and their level of evidence as appraised by authors and two independent EBM experts; (2) use of clinical outcomes; (3) mention of treatment benefit and potential harm in measurable terms; (4) mention of cost of treatment; and (5) disclosure of pharmaceutical industry support.

## Methods

Manual retrieval of all MNAs was carried out on all articles on adult non-surgical disease prevention and treatment published daily from January 2002 to June 2002 in the health section of the top three leading local newspapers adjudged to be of widest circulation in a national survey, namely: Philippine Daily Inquirer (PDI), Philippine Star (PS), and Manila Bulletin (MB). MNAs on diagnosis, pediatric and surgical treatments, multiple treatment modalities in a single article, and those with a "Dear Doctor", letter to the editor or question and answer format were excluded. All MNAs

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published during the six-month period, were retrieved, classified according to disease featured, and ranked. The top 10 featured diseases were identified (not necessarily reflecting the top 10 causes of morbidity and mortality in the country). To simplify the process, the authors limited the assessment of MNAs and retrieval of cited references of the MNAs to those featuring the identified top 10 diseases only.

MNAs were evaluated based on criteria proposed by Guyatt and Oxman, et al.<sup>1,3</sup> on how to evaluate medical journal articles about therapy or prevention, modified appropriately to fit medical news reporting in the broadsheet. The identity of authors of the MNAs were purposely deleted prior to assessment using a form to collect largely dichotomous (yes or no) information on the presence or absence of the following in the MNAs evaluated: (1) references cited and their level of evidence as appraised by authors and two independent EBM experts; (2) use of clinical outcomes; (3) mention of treatment benefit and potential harm in measurable terms; (4) mention of cost of treatment; and (5) disclosure of pharmaceutical industry support. References cited by the MNAs were further classified as follows: (1) published medical journal articles involving human subjects; (2) medical textbooks; (3) expert's opinion based on excerpts from their medical lectures, interview and anecdotes; (4) animal or laboratory studies; and (5) non-specified if cannot be classified as above. The full text reference journal articles cited were retrieved and appraised independently by two experts to determine quality of evidence as follows: *Level I* if the reference article is a systematic review of more than one RCT, or at least one well-designed RCT, blinded, using groups with comparable baseline characteristics, with a high level of follow up and analyzed by intention to treat analysis; *Level II* if based on at least one RCT but with some limitations or flaws; and *Level III* if based on non-randomized, observational or descriptive studies. Differences, if any, were resolved by consensus.

### Results

There were 113 MNAs on non-surgical treatment or prevention published in the top three leading local newspapers from January to June 2002. The more commonly featured diseases were diabetes, coronary diseases and cancer. Table 1 shows the other seven of the top 10 diseases.

### References of the MNAs

Out of the 113 MNAs, 94 (83%) cited references as basis for the medical news. Table 2 shows the classification of references used in the 94 MNAs by the three newspapers. Of the 94 MNAs with cited references, 54 (57%) were based on medical journal articles, 21 (22%) on expert opinion, seven (8%) on laboratory or animal studies, and one (1%) cited medical textbooks as reference. Eleven (12%) MNAs had references that could not be classified as any of the above.

The highest proportion of MNAs based on medical journal articles was published in the Philippine Star (79%), followed by Manila Bulletin (51%) and Philippine Daily Inquirer (36%). MNAs based on expert opinion were found most frequently in the pages of Philippine Daily Inquirer (29%), followed by Manila Bulletin (24%) and Philippine Star (18%). Laboratory and animal studies were cited as basis for news articles for treatment of adult diseases both in Philippine Daily Inquirer (21%) and Manila Bulletin (8%), but not in Philippine Star.

### Assessment of level of evidence by the MNA authors

None of the authors of the published MNAs mentioned critically appraising their source references based on soundness of study design and appropriateness of analysis.

**Table 1. Ten (10) most commonly featured diseases**

Disease	Number	Percent
Diabetes	26	23.0
Coronary artery diseases	23	20.4
Cancer	19	16.8
Arthritis	15	13.3
Hypertension	13	11.5
Osteoporosis	7	6.2
Pulmonary Embolism	3	2.7
Obesity	3	2.7
Respiratory tract infections	2	1.8
Viral infections	2	1.8
Total	113	100

### Independent assessment of level of evidence by two EBM experts

The 54 medical journal articles were assessed independently by two EBM experts with regards the level of evidence. Table 3 shows the results. Thirty four (63%) were Level I, nine (17%) were Level II, and eleven (20%) were Level III evidence. The 34 articles with Level I evidence were single well-designed RCTs; none were based on meta-analysis or review articles. All except one, 95% of the 22 MNAs in the Philippine Star with medical journal articles as reference were graded as Level I evidence. Only 44% (12 of 27) and 20% (one in five) of the MNAs with medical journals as reference in the Manila Bulletin and Philippine Daily Inquirer had Level I evidence, respectively.

**Table 2. References used by the 94 MNAs according to newspaper**

Reference	Philippine Star (PS)	Manila Bulletin (MB)	Philippine Daily Inquirer (PDI)	Total
	No (%)	No (%)	No (%)	
Medical Journal Articles	23 (79)	26 (51)	5 (36)	54 (57)
Expert Opinion	5 (18)	12 (24)	4 (29)	21 (22)
Laboratory / Animal Studies	0	4 (8)	3 (21)	7 (8)
Textbook	0	1 (2)	0	1 (1)
Unspecified	1 (3)	8 (16)	2 (14)	11 (12)
Total	29 (100)	51 (100)	14 (100)	94 (100)

### Clinical endpoints, quantification of benefit and harm, cost consideration

Based on the assessment of the two EBM experts of the 94 MNAs with cited references; 51 (54%) used clinical endpoints as outcome, 31 (33%) used quantified potential benefit; 21 (22%) cited potential harm; 22 (23%) disclosed pharmaceutical or industrial support; and only four (4%) mentioned cost of treatment.

### Discussion

This study evaluated 113 MNAs published in three leading newspapers in the Philippines using the criteria proposed by Guyatt and Oxman, et al.<sup>1,3</sup> on how to evaluate medical journal articles about therapy or prevention, modified appropriately to fit medical news reporting in the broadsheet. Among the 10 most commonly featured diseases in these MNAs, four were in the top 10 causes of morbidity in the Philippines (coronary artery diseases, hypertension, respiratory tract infections and viral infections) and three (coronary artery disease, cancer, diabetes) were among the top 10 causes of mortality ([http://www.doh.gov.ph/kp/statistics/leading\\_mortality](http://www.doh.gov.ph/kp/statistics/leading_mortality)).

The role of the daily newspaper along with the radio, television and increasingly the web, is a vital source of information about health and medical treatment to the lay person cannot be underestimated. Health news coverage influences health knowledge and behavior of the reading public. However, this study is consistent with previous studies that have shown inaccurate media coverage of published scientific papers, understating adverse effects and sensationalizing benefits unsupported by sound evidence. Thus in such cases, the problem lies, not in research, but in the way it is interpreted for the public.<sup>4</sup>

**Table 3. Level of Evidence of the cited reference of the 94 MNAs (Medical News Articles)**

Level of evidence of the cited reference	Philippine Star (PS)	Manila Bulletin (MB)	Philippine Daily Inquirer (PDI)	Total
	No (%)	No (%)	No (%)	No (%)
Level I	21 (95)	12 (44)	1 (20)	34 (63)
Level II	0	6 (22)	3 (60)	9 (17)
Level III	1 (5)	9 (34)	1 (20)	11 (20)
Total	22 (100)	27 (100)	5 (100)	54 (100)

With respect to providing complete information to enable the readers to assess the benefits and relevance of the medical news to their health situation, the 113 MNAs from the three leading local newspapers in the Philippines showed shortcomings. Basic citing of references for the MNAs was not done in 19 (17%) of the 113 MNAs published, which may discourage further efforts to validate any claims made in the article, and worse, may be accepted as gospel truth among its readers.

Assuming the health issue has been decided to be of interest, determining whether results of a journal article is valid is actually the first step before the rest of the journal article merits further reading and therefore, worthy of publication. Although majority (94 [83%]) of the MNAs cited references; none of the authors mentioned critically appraising them based on the soundness of its study design and analysis. Authors of medical news need to understand this process and appraise the level of evidence of their references, not simply assuming its validity based on its being published in any medical journal, especially those which do not undergo peer-review.

Although at least two of the leading local newspapers based medical news reporting on medical journal articles, assessment of these articles with respect to study design and analysis is critical to ensure that bias is minimized, and that results actually reflect treatment effect. Where possible, this is best done through proper randomization where both known and unknown outcome determinants are evenly distributed between treatment and control groups, which need to be adequate in size and comparable at baseline; where participants and researchers are both blinded, and subjects completely accounted for and analyzed by intention to treat analysis; results of which are appraised as Level I evidence, and therefore, valid. Included in Level I evidence are well-conducted systematic reviews of well-conducted RCTs. Results of randomized studies with some flaw or limitation in sampling, design and analysis are considered Level II, results of which may be valid with caution. Non-randomized studies, observational or descriptive studies are assessed to be Level III evidence where treatment allocation is done in any way, other

than randomization, which tends to show larger, frequently false positive treatment effects than do RCTs.<sup>14-17</sup> These studies offer weaker medical evidence. Relying on the results of these studies is an option when there are no available well-designed RCTs or systematic reviews. They are considered the best evidence available in this situation. There were only 34 MNAs based on Level I evidence, which comprise 63% of the 54 MNAs citing reference medical journals, or a mere 30% of the total 113 MNAs published in the broadsheets for a period of six months.

The second most commonly used reference for MNAs published in local leading broadsheets was expert opinion. Expert opinion, especially if done in consensus, is useful to bridge the crucial gap in areas where good evidence is not robust, if available, or is not applicable to certain patient populations excluded, if not addressed, in clinical trials. Validity and applicability of medical research may be simplified by medical experts for knowledge translation from medical journals, not only for clinicians but the general public as well. However, expert opinion based on anecdotal evidence alone to claim treatment benefit is dangerous and often misleading, which authors of MNAs may perceive as already valid and newsworthy. Expert opinion becomes valuable if complemented by a careful balance between benefit and harm, while appreciating patient preferences, cultural differences, and cost of treatment when best available evidence is lacking.

There were seven MNAs (8% of 94 MNAs with cited references and 6% of the 113 MNAs) based only on animal studies, which, disturbingly, get immediate prominence in the national dailies without the benefit of going through clinical trials in human subjects primarily for efficacy and safety. These news articles may prematurely recommend treatment for diseases, perpetuating false hopes to the general public who may believe in the efficacy of these treatments when there is no clinical evidence to support their claim.

About half of the 94 news articles were based on treatments with outcomes measured as mere improvement in laboratory parameters, e.g., lowering of blood cholesterol or fasting blood sugar. This may hold lesser significance to the lay person compared to studies defining risks and mortality reduction, symptom control and better quality of life as outcomes.

All 94 MNAs mentioned benefit of treatment; however, 54 (67%) failed to further quantify it in measurable terms. Again, this is potentially misleading because the reader cannot accurately appreciate the magnitude of treatment effect. This finding is consistent with an earlier study by Moynihan et al.,<sup>2</sup> which showed failure to quantify benefit in 40% of articles published in the US. Quantifying benefit can be expressed either in absolute or relative terms of risk reduction, which, when reported separately, may provide an incomplete picture of the efficacy of treatment, potentially leading to an overstatement of benefits and sometimes media hype for treatment breakthroughs depending on how results of clinical trials are interpreted and subsequently phrased to make catchy titles for medical news articles. Generally, giving both the absolute and the relative benefits is more informative to the reading public who utilize the broadsheet for their treatment options and preferences.

Although all 94 articles reported benefit of treatment, only 21 (22%) mentioned potential harm, stated in general and not in measurable terms. This is similar to previous studies in other countries which either inaccurately reported results of published scientific papers<sup>2,18</sup> or over-stated adverse events and risks<sup>19</sup>. Like treatment benefit, potential harm can either be expressed in absolute or relative terms, which when reported

separately, will downplay or sensationalize the actual results. Other advocates have noticed drug company advertisements sometimes expressed the benefits of their drug using relative risk terms but show the unwanted side effects in absolute terms, which is both wrong and misleading.<sup>20</sup>

In a country where out-of-pocket payments comprise almost half of total healthcare expenditures based on the National Health Account, the cost of treatment is an important factor, next to treatment efficacy and safety, for the average Filipino decision-making for treatment options. Unfortunately, cost of treatment was not mentioned in 97% of the published MNAs. The lay person will always ask whether a certain treatment is worth the cost. Computing for the number needed to treat (NNT) for the desired clinical outcome will help the reader appreciate the cost-efficiency of a certain treatment. The lower the NNT, the more cost-efficient the treatment is, the better the reading public will appreciate and possibly decide to use it.

Disclosure of support (whether government, pharmaceutical industry or individuals) is crucial information when assessing MNAs and their references in detecting potential biases due to the influence of the sponsor. Although other types of sponsorship are known to influence the results, in this study the one of most concern—i.e., pharmaceutical industry support—was determined. Industry ties or pharmaceutical support between and among medical experts interviewed for certain drugs and clinical researchers conducting clinical trials are common in the Philippines. Out of 94 MNAs reviewed, 24 (26%) mentioned industrial or pharmaceutical support based on self-reporting. Studies have shown that commercial funding may sometimes be under-reported<sup>21</sup> and associated with study outcomes more favorable to the sponsor's products.<sup>22-25</sup>

### Conclusions

There were only 34 MNAs that were based on Level I medical evidence, which comprise 63% of the 54 MNAs citing reference medical journals or a mere 30% of the total 113 MNAs published in local broadsheets for a period of six months. Almost half of the published MNAs focused on surrogate instead of hard clinical endpoints as outcomes. All claimed benefit but only a third (33%) actually quantified this. Majority (78%) failed to mention potential harm or adverse reaction of treatment. A mere 3% mentioned cost of treatment which is more important to the economically challenged Filipino. Less than a quarter (22%) disclosed industry or pharmaceutical support. None of the authors of the published MNAs actually critically appraised their reference articles to determine validity of study results.

While awareness and need for EBM in medical journals is clear, it has not yet become the standard principle in print media as basis for information in reporting medical and health issues to the general public, as far as Philippine media is concerned. When utilizing scientific studies as source of information, journalists need to determine if this is the best evidence available based on sound study design and analysis, before conclusions are reported as medical news. This would help safeguard the public from false claims on the therapeutic value of medical products and services.

There is therefore a need for clinical epidemiology units and training centers to offer to train journalists (particularly those who are assigned to the health beats of the paper) to be oriented to the principles and benefits of EBM. Applying guidelines on evidence-based medical news reporting should be done so that the best evidence available will ultimately reach the intended end-user, the reading public.

### Limitations and recommendations of the study

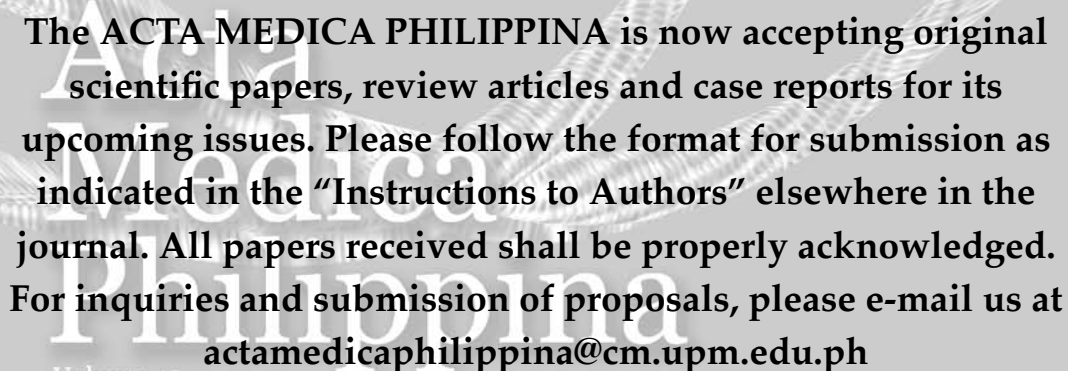
Since the study covered only the top three selling daily broadsheets for only a six-month period, this may not adequately reflect the practice of medical journalism in the Philippines. The proliferation of MNAs may or may not coincide with (1) medical conventions where certain medical products and services may be presented, (2) short to medium-term media campaigns by local public relations firms engaged by pharmaceutical companies scheduled at different times of the year, and (3) medical breakthroughs or scientific discoveries and/or disease outbreaks. This may result to either expected over-exposure or unusual non-exposure of certain medical products and services which this study may or may not have covered, as medical media exists in a random, non-steady-state, directly or indirectly influenced by pharmaceutical industry-initiated marketing strategies and prevailing or seasonal interests in medical services or products within a certain period of time.

It is recommended that the same study be conducted for a longer period of time covering a broader line of newspapers including tabloids and magazines, and other media like the television, radio and internet. Further, it is recommended to obtain information on disclosure of support of funding agencies and individuals other than the pharmaceutical industry.

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