A Content Analysis of Health Research Reported by the Daily Newspapers of Trinidad and Tobago

S Nichols[1], N Chase[1]

ABSTRACT

The ability to translate health research into useful information for the layperson requires both excellent scientific expertise and communication skills that are often foreign to journalist and editors. In this study, we assessed the content of health research articles published in the local daily newspapers for the year 2003. Issues considered included physical presentation, coverage, primary content of the article relative to the country health profile, accuracy of the article compared to its original publication, health model (ie preventative versus medical/curative) and tone (emotive nature of the report, stakeholder addressed). The authors identified 321 eligible articles as follows, The Trinidad Express (108), The Trinidad Guardian (100) and The Trinidad and Tobago Newsday (113). More than 90% of the reports appeared in the newspapers within two weeks of their original journal publication; 10.5% of the articles had over 50% newspaper readership coverage. Headlines were prominently displayed for 70% of articles while 86% of the written text were located on the top right and left quadrant of pages where the eye naturally falls during reading. Photographs accompanied 36% of the articles.

Approximately 72.5% of articles accurately reflected the content of the original publication and 67% of them were classified as preventative. There were similar proportions of good (45%) and bad (47%) articles. The top five predominant themes were nutrition (24.3%), cancer (18.2%) women's health (17.6%), heart disease (14.2%) and mental health (10.3%). The findings suggest a tremendous effort by journalist and editors to provide relevant health information in a timely and attractive manner; however, this should not be at the expense of accuracy.

Análisis del contenido de las investigaciones de salud reportadas por los diarios de Trinidad y Tobago

S Nichols[1], N Chase[1]

RESUMEN

El arte de traducir las investigaciones de salud en información útil para el gran público requiere excelencia tanto en relación con la expertez científica como con respecto a la habilidad para la comunicación – cualidades a menudo ausentes en periodistas y editores. Este estudio evalúa el contenido de los artículos sobre investigación de la salud, publicados en los diarios locales durante el año 2003. Las cuestiones abordadas incluyen la presentación física, cobertura, contenido primario del artículo en relación con el perfil de salud del país, exactitud del artículo respecto de la publicación original, modelo de salud (es decir, preventivo versus médico/curativo), y tono (naturaleza emotiva del reportaje, dirigido a partes interesadas). Los autores identificaron 321 artículos elegibles, de la forma siguiente: The Trinidad Express (108), The Trinidad Guardian (100), y The Trinidad and Tobago Newsday (113). Más del 90% de los reportajes aparecieron en los periódicos dentro de las dos semanas posteriores a su publicación en la revista original; 10.5% de los artículos tuvo más de un 50% de cobertura en términos del público lector. Los titulares se hallaban desplegados de forma prominente en el 70% de los artículos, mientras que el 86% del texto escrito se encontraba en la parte superior derecha y el cuadrante izquierdo de las páginas, hacia donde naturalmente dirigimos la vista al leer. El 36% de los artículos estuvo acompañado de fotografías. Aproximadamente 72.5% de los artículos reflejaron con precisión el contenido de la publicación original, y 67% de ellos fue clasificado como

preventivos. Los artículos buenos (45%) y malos (47%) estuvieron en igualdad de proporción. Los cinco temas predominantes fueron: la nutrición (24.3%), el cáncer (18.2%), la salud de las mujeres (17.6%), las enfermedades del corazón (14.2%) y la salud mental (10.3%). Los hallazgos indican un esfuerzo extraordinario por parte de los periodistas en cuanto a ofrecer información revelante sobre la salud, de forma oportuna y atractiva. Sin embargo, esto debe hacerse sin sacrificar la exactitud.

INTRODUCTION

While they have been criticized for attributing too much certainty to health research findings, for premature representation of findings as medical breakthroughs, and for being alarmist, incomplete, inaccurate and inconsistent, newspapers have become a major source of health related information for the general public (1–4). This information has the potential to influence the public belief about the aetiology of disease as well as the provision and use of health services (5, 6). Thus, the newsprint medium is an important source of health risk communication. The onus is therefore on journalists and editors to explain clearly the methodologies by which health risk severity are assessed and interpret the results emanating from such methodologies in a manner that facilitates a better understanding of the associated risks by the readership (7). Such a venture requires both excellent scientific expertise and the ability to translate complex technical information into a commonsense language that could be understood by the general newspaper readership. Unfortunately, journalists and editorial staff are constrained by their inability to evaluate the quality of evidence and argument presented in medical journals (5). It is therefore crucial for stakeholders in the health sector to analyze and monitor on a continuous basis the quality of health research reported in the newsprint medium (8–10). The authors, therefore, undertook a content analysis of the health research information published by the three local daily newspapers namely: the Trinidad and Tobago Newsday (Newsday), The Trinidad Express (Express), and The Trinidad Guardian (Guardian).

METHODS

All health research articles published in the three local daily newspapers (*ie* Newsday, Express, and Guardian) for the period January 1 to December 31, 2003, were retrieved and their contents recorded on a standardized form by one of the authors. Included in the study were peer-reviewed journals, press releases, articles from international news agencies such as Reuters and Associated Press and articles by local journalists based on published research. Excluded from the study were newspaper editorials, commentaries, articles for debate and education, narrative reviews, letters to the editor, case reports, articles related to the local health sector and advertisement of health products and services. The content of the articles were assessed by taking into consideration currency, coverage, prominence, relevancy, congruency, health model perspective, tone and orientation of the report. To determine interrater agreement, Cohen's kappa (κ) was computed for all of the content issues on a random 20% of articles extracted

and coded by the other author. For Cohen's kappa (κ), values of 0.75 or greater may be taken to represent excellent interrater agreement beyond chance, values less than 0.4 may be taken to represent poor interrater agreement beyond chance and values between 0.4 and 0.75 represent fair to good agreement beyond chance (11).

Currency

The period elapsing between the original publication of the article and its appearance in the local newspapers was used to index currency. A random sample of 20% of articles citing an original source was analyzed for their currency.

Coverage

Coverage was assessed by noting the number of newspapers carrying the particular article. Estimates suggest a daily readership of approximately 188 000 persons with the Express emerging in the number one position with 43% of the daily newspapers' readership compared to 36% daily newspapers' readership for the Newsday and 21% daily newspapers' readership for the Guardian (12–14).

Prominence

This feature referred to the frequency and manner in which the particular article is presented in the newspaper. In this study, size of headline, position of the page, length, frequency of publication, and presence or absence of accompanying graphics were use to assess prominence (15).

Relevance

This referred to the nature of the article with respect to the major health issues facing the country. Articles were classified into one or more categories based on the predominant issue(s) contained in the report. For example, the article "*Fats from olive oil safer than mayonnaise*" published by the Express was classified under the category of Nutrition while "*Breast cancer drug could treat infertility*" published by the Newsday was classified under the categories of Cancer, Drug Therapy, Women's' Health and Reproductive Health. Relevancy was also assessed by taking into consideration the socio-economic context (industrialized or developing country) in which the research was conducted (16, 17).

Congruency

Congruency referred to the degree of agreement between the newspaper report and the original report of the particular health research issue. In this study, congruency was assessed by comparing a random sample of 20% of the articles with

the original report with respect to the subject of the article, author, affiliated institution, characteristics of participants, number of participants, results, study objective(s), conclusion, limitation of findings, study procedure, study setting and outcome of interest. Both percentage and Cohen's kappa (κ) were computed to determine the degree of agreement on points of congruency between the newspapers and the published articles (18). Articles having similarities in ninety per cent or more of congruent features and kappa values greater than 0.75 were deemed to have a high degree of congruency and accurately replicated the original report.

Health Model Perspective

This feature refers to the predominant apparent model of health displayed by the report (*ie* preventative model or medical model). Public health articles for the purposes of this study included health promotion and primary healthcare as major components. Newspaper articles in this category included factors conducive to health, amelioration of preventable conditions and rehabilitation such as life-style (behavioural and environmental adaptations), nutrition, consumption of alcohol and tobacco products (16). The medical model on the other hand is based on the germ theory of disease and assumes that all disease is caused by specific aetiological agents (16). In this model, the patient tends to be seen as the passive target of medical intervention rather than part of a complex social environment. Newspaper items included under the medical model were those which featured as their main theme, medical intervention or treatment, scientifically based procedures, technology and institutionally based care founded on laboratory based research about disease processes.

Tone and Orientation

This referred to the emotive nature of the article. Articles were classified as positive, negative, or neutral. In addition, articles were classified according to whether they addressed persons or issues (16).

Statistical Analysis

Overall, summary simple statistics such as mean, percentages and frequencies were computed. Odds ratios were determined for variables of interest using logistic regression. All data were analyzed using Stata (Stata Statistical Software: Release 7.0. Texas, Stata Corporation, 2001) and SPSS (SPSS Statistical software: Release 11.0 for windows, Chicago, Illinois, 2003). Both percentage agreement as well as the more conservative Cohen's kappa (κ) were calculated to determined the degree of agreement between investigators as well as the degree of agreement between the newspaper article and original publication. A kappa value greater than 0.75 was taken to represent excellent agreement beyond that expected by chance.

RESULTS

Of the 321 eligible articles, 108 were collected from the Express, 100 from the Guardian and 113 from the Newsday. These represented 88 (22.2%) publication days per year for the Express, 58 (15.9%) publication days per year for the Guardian and 79 (21.6%) publication days per year for the Newsday. Cohen's kappa (κ) for interrater agreement for the classification of variables ranged from 0.86 to 1.00.

Currency

Approximately 98% (63 out of the 64 randomly selected articles) were originally published during 2003 and over 90% of these reports appeared in the newspapers within two weeks of their original publication date.

Coverage

Thirty articles (9.3%) were reported by two or more newspapers as follows; four articles by all three daily newspapers (100% readership coverage), nine articles reported by the Express and Newsday (79% readership coverage), eight articles by Guardian and Newsday (64% readership coverage) and nine articles by the Express and Guardian (57% readership coverage). The Express published the majority of its health research articles on Thursdays (27%), Mondays (25.2%), Wednesdays (20.9%) and Saturdays (18.3%) while Mondays (51.5%) and Sundays (37.7%) were the preferred days for the Guardian. Wednesdays (28.3%), Tuesdays (18.6%) and Thursdays (18.6%) were the preferred publication days for the Newsday.

Table 1:   Examples of headlines of articles published in the daily newspapers

The Trinidad Express
- $ Stem cells help patients recover from heart disease
- $ Fats from olive oil safer than mayonnaise
- $ Obesity linked to cancer
- $ Sex at least once a day helps to keep the doctor away
- $ For long life drink red wine

The Trinidad Guardian
- $ Thin women more prone to morning sickness
- $ Caffeine alcohol mix protects against brain damage
- $ Health effects of second hand smoke questioned
- $ Infertility more common among lesbians
- $ Fat has no effect on stroke risk
- $ Pap smears not needed every year

The Trinidad and Tobago Newsday
- $ Breast cancer drug could treat infertility
- $ Women pregnant with boys eat more
- $ Red wine good for your lungs
- $ Smoking increases risk of multiple sclerosis
- $ Painkillers during pregnancy increase miscarriage risk
- $ A tomato a day keeps heart disease away

Prominence

Table 2 shows the frequency of several key features related to prominence. Two-thirds of the headlines were at least one

Table 2: Issues relating prominence of health research reporting by the daily newspapers

Features of article layout	n = 321 Frequency (%)
Size of headline	
Small (< 9 mm)	96 (30.0)
Medium (9–11 mm)	185 (57.9)
Large >11 mm	40 (12.1)
Location on Page	
Top left quadrant	101 (31.6)
Top right quadrant	77 (24.0)
Top left and right quadrants	97 (30.1)
Bottom left quadrant	17 (5.4)
Bottom right quadrant	24 (7.5)
Bottom left and right quadrants	0 (0)
Whole page	5 (1.4)
Location in the newspaper	
Left page	169 (52.7)
Right page	145 (45.2)
Both pages	7 (2.1)
Accompanying graphics	
Yes	117 (36.4)
No	204 (63.6)
Article length	
< 500 words	253 (78.8)
500–1000 words	65 (20.2)
> 1000 words	3 (1.0)

Table 3: Shows a summary of the frequencies of the predominant issues addressed by the daily newspapers.

Predominant issues	n = 321 Frequency (%)
Adolescent Health	6 (1.7)
Alcohol	12 (3.4)
Blood Pressure (Hypertension)/ Stroke	23 (6.4)
Cancer	65 (18.2)
Diabetes Mellitus	21 (5.9)
Drug Therapy	25 (5.9)
Exercise /Fitness and Health	28 (7.8)
Genetics	5 (1.40
Heart Disease	51 (14.2)
Herbal Medicine	6 (1.7)
HIV/AIDS	10 (2.8)
Infant/Children Health	28 (7.8)
Infectious diseases	3 (0.8)
Kidney disease	3 (0.8)
Men's health	14 (3.9)
Mental health	37 (10.3)
Nutrition	87 (24.3)
Obesity	29 (8.1)
Pain	5 (1.4)
Reproductive Health	9 (2.5)
Smoking	14 (3.9)
Stress	16 (1.7)
Women's Health	63 (17.6)

centimetre in height. The majority of articles (85.6%) were displayed in the top right and left quadrants of the relevant pages. The majority of articles (78.7%) were generally less than 500 words in length and most (63.6%) were devoid of graphics. Articles were equally likely to be published on left or right pages. A significantly larger proportion of health research articles focussing on the major cause of morbidity and mortality in the adult population (*ie* heart disease, cancer, high blood pressure and diabetes mellitus) was found in the Express (53.7%) and Newsday (41.3%) as compared to the Guardian (14.7%).

Relevance

The top ten most frequently reported issues in order of decreasing importance were as follows; Nutrition (24.3%), Cancer (18.2%), Women's Health (17.6%), Heart Disease (14.2%), Mental Health (10.3%), Obesity (8.1%), Infant and Child Health (7.8%), Exercise and Fitness (7.8%), Diabetes Mellitus (5.9%), and Drug therapy (59%). Noticeably, few articles were devoted to research on HIV/AIDS (2.5%). In addition, the majority of the research work (97.5%) was conducted on populations in developed countries.

Congruency

Overall, the percentages of randomly selected articles reporting methodological components consistent with the original report were as follows: objective(s) (100%, κ = 1.00), study design (80.0%, κ = 0.53), study procedure (95.0%, κ = 0.86), description of participants (88.0%, κ = 0.65), number of participants (77.5%, κ = 0.55), outcome variables (97.5%, κ = 1.00), authorship (100.0%, κ = 1.00), authors' affiliation (95.0%, κ = 0.86), results (80.0%, κ = 0.56), conclusion (77.5%, κ = 0.50), and limitations (82.0%, κ = 0.61), and study setting (100%, κ = 1.00) (Table 4).

Health Model Perspective

Articles categorized as public health were significantly more likely to be published than those of the medical model (69.2 versus 30.8, $p < 0.0001$). The major stakeholders addressed by the articles were the public (56.7%), women (20.7), men (7.8), infant and children (5.3) and professionals (practitioners, researchers and policy makers) (9.5%). Articles classified under the medical model were significantly more likely to be positive than those classified as public health model (odds ratio 1.90, 95% CI: 1.17, 3.08; $p = 0.02$).

Tone and Orientation

Positive and negative articles were equally prevalent (45% *vs* 47%) in the newspaper reporting of health issues. In addition, the majority (64.8%) of articles addressed persons rather than issues. Articles classified as negative were significantly more likely (OR = 2.27, 95% CI: 1.42, 3.62; $p < 0.0001$) to contain limitations than those classified as positive.

Table 4:   Percentage agreement and kappa values between newspapers reports and original articles

Methodological features	Feature present and identical in both	Feature absent in both articles	Feature present in one article and absent in the other	Percentage agreement	Cohen's kappa
Authorship	32	14	0	100	1.00
Author's affiliation	36	8	2	95	0.86
Objective	45	1	0	100	1.00
Study design	29	8	9	80	0.53
Study procedure	36	8	2	95	0.86
*Description of study population	38	3	5	88	0.65
No of participants	25	11	10	77.5	0.55
Study setting	35	11	0	100	1.00
Outcome variable	45	1	0	100	1.00
Results	27	10	9	80	0.56
Conclusion	28	8	10	77.5	0.50

DISCUSSION

In this study, we examined the content of health research reported by the three daily newspapers in Trinidad and Tobago using an objective, quantitative and systematic approach. Overall, the results suggest that journalists and editors of these newspapers make a good effort to present relevant health information in an attractive and timely manner. However, more attention needs to be paid to the congruency of the important aspects of the reports in order to ensure that these reflect accurately the contents of the original publication. In fact, the analyses reveal major deficiencies in study design, number of participants, results, conclusion, and study limitations all of which are crucial to the correct interpretation of findings emanating from the particular research. Failure to address adequately these important methodological issues can influence the public perception of underlying risks associated with the particular phenomenon as well as its understanding of the aetiology of disease and consequent health behaviour. Compounding this is the finding that articles classified as negative were significantly more likely to contain limitations than those classified as positive. This creates a dangerous scenario by implying that the finding in those studies classified as positive are unequivocal (3, 4). Such presentations are misleading and pose a serious concern in situations where the newspaper report of health issues are the primary source of information of particular health issues. Clearly, journalists and editors need to collaborate with those health professionals who are trained in the interpretation of health research, since many of the skills and competencies needed to translate complex research into a language that lay persons can understand might not be part of their formal training (5).

Relevance and the manner of presentation are two features of any form of printed material that help to generate interest in articles. It is thought by many in the industry that the articles in the newsprint medium reflect the issues that are of interest to the society. This being the case, we might assume that there is a high level of public interest in issues related to Nutrition, Cancer, Women's Health, Heart Disease, and Mental Health. Yet, we know of no research by the newspapers to suggest that these are the prime health issues that would generate public interest. Most disappointing though was the scant attention being given to issues such as high blood pressure, diabetes mellitus and HIV/AIDS research despite the fact that high blood pressure and diabetes mellitus and their sequelae account for over 50% of attendance at healthcare facilities nationwide as well as the massive monetary commitment by government following approval of a $20 million loan from the World Bank on June 26, 2003, for treatment and prevention of HIV/AIDS (19, 20). Notwithstanding, this journalist and editors of the Express and Guardian maintain an excellent periodicity for the publication of diseases most rampant in the adult population. It appears that the newsprint medium not only reflects the health concerns of the population but also dictates the health issues for consideration by society (21, 22). Another important aspect of relevancy is similarity of context. The majority of health research issues reported was conducted in developed countries such as the United States of America, Canada, and some of the more wealthy countries comprising the European Union. This might reflect a true paucity of relevant research from developing countries. However, within the Caribbean, there has been important and relevant health research with serious policy implications that seem not to be deemed newsworthy. We believe that the time has come for journalist and health research scientists in the Caribbean to collaborate in a manner that exposes populations of the Caribbean, especially policy makers and planners to important contextual health research. This might be achieved by devoting a proportion of the health research articles to research done with the Caribbean. Assistance in identifying such research might be from institutions such as The University of the West Indies and the Caribbean Health Research Council (CHRC). Regular press releases from

journals such as the West Indian Medical Journal, Caribbean Health and the Pan American Journal of Public Health to local and regional newspapers can contribute significantly to the issue of news relevancy.

The findings of a two-fold likelihood of health research articles being of the public health model rather than the medical model is contrary to the findings of a similar study (5). This might reflect the fact that the majority of these studies were conducted in countries where research into basic medical research and technology to improve the quality of healthcare delivery are at the forefront of their respective healthcare system reform. This is different from the situation in Trinidad and Tobago and many of the English-speaking Caribbean countries that are in the throes of healthcare reform where the patient/client are being asked to take a more proactive role in the maintenance of their health. This focus on health research with a preventative purview is encouraging and suggests an acute awareness on the part of journalist and editors to reflect the overall patient-centred trust of the health sector reform programme (23). This coupled with the fact that two-thirds of the articles focussed on persons rather than issues reinforces the need for journalists and editors to focus their attention on presenting health research in an accurate manner. The analyses were carried out for one year only and might not reflect the content pattern of previous years. Clearly, there is need for such a study to reveal the underlying pattern of choice for reported studies.

Content analysis is an objective technique that is heavily influenced by interrater reliability (24, 25). Thus poor interrater reliability would render data and their concomitant interpretations at best misleading (26). There are many different measures, or indices, of intercoder reliability; however, only a small proportion (Percent agreement, Holsti's method, Scott's pi (p), Cohen's kappa (k), and Krippendorff's alpha) is widely used to analyse content analysis in communication (26). We used Cohen's kappa to estimate agreement between observers for several reasons. First, most of the variables collected were nominal and quite suited to assumptions for Cohen Analyses. Secondly, the Cohen's procedure for calculating agreement takes into consideration coding agreement that can occur by chance and represents, unlike percentage agreement, a highly conservative estimate of intercoder agreement. Finally, Cohen's kappa can be estimated easily in SPSS using the cross tabulation feature (27). Thus the high kappa values (0.86 to 1.00) for interrater reliability suggest excellent agreement between the investigators on all variables collected and improves the interpretation of the results.

This study has several limitations. First, it looked only at the content of the newspapers and did not address the question of the percentage of regular readers who peruse these health research articles nor the effectiveness and impact of the information on readers. Secondly, there are other features of the text that could have been considered in its context analysis such as the reading level of the article, font size and type. Thirdly, there are other approaches to analyzing article content each with its own particular strengths and limitations (28, 29). Fourthly, the analyses were carried out for one calendar year and might not reflect the general long-term content pattern of the various newspapers. Notwithstanding these limitations, the current study represents the first quantitative assessment of the content of health research articles published in the Trinidad and Tobago daily newspapers. In this respect, the study provides fundamental information on the nature of the content of health research reporting in the local newspapers in Trinidad and Tobago and provides a template upon which content analysis of other health research issues in the print media might be assessed.

To summarize, journalists and editors succeeded in presenting relevant health research in an interesting and timely manner; however, they need to ensure that it is congruent with the original publication. This might be by summarizing accurately each section of the original publication in a manner similar to the structured abstract format used by many peer-reviewed journals.

REFERENCES

1. Deary IJ, Whiteman MC, Fowkes FG. Medical research and the popular media. Lancet 1998; **351:** 1726–7.
2. Moynihan R, Bero L, Ross-Degnan D, Henry D, Lee K, Watkins J et al. Coverage by the news media of the benefits and risks of medications. N Engl J Med 2000; **342:** 1645–50.
3. Burns RB, Moskowitz MA, Osband MA, Kazis LE. Newspaper reporting of the medical literature. J Gen Intern Med 1995; **10:** 19–24.
4. Phillips DP, Kanter EJ, Bednarczyk B, Tastad PL. Importance of the lay press in the transmission of medical knowledge to the scientific community. N Engl J Med 1991; **325:** 1180–3.
5. Entwistle V. Reporting research in medical journals and newspapers. BMJ 1995; **310:** 920–23.
6. Freimuth, VS., Greenberg RH., DeWitt J, Rose, M. Covering cancer: newspapers and the public interest. J Comm, 1984; **34:** 62–73.
7. Preliminary report on scientific quality of life criteria in risk benefit assessment. http://europa.eu.int/comm/food/fs/sc/ssc/out268_en.pdf. Accessed on 20/06/2004.
8. Dan BB. TV or not TV. Communicating health information to the public. JAMA 1992; **268:** 1026–7.
9. Angell M, Kassirer JP. Clinical research – what should the public believe? N Engl J Med 1994; **331:**189–90.
10. Van Trigt AM, de Jong-van den Berg LT, Haaijer-Ruskamp FM, Willems J, Tromp TF. Journalists and their sources of ideas and information on medicines. Soc Sci Med 1994; **38:** 637–43.
11. Capozzoli MV, McSweeney L, Sinha D. Beyond kappa: A review of interrater agreement measures. Can J Stat 1999; **27:** 3–23.
12. World Bank. World Development Indicators, 2004.
13. Trinidad Express Newspaper. http://www.ccngroup.com/express.php. Accessed on 20/6/04.
14. Newspaper giveaways cloud media survey results. http://www.newsday.co.tt/stories.php?article_id=4371. Accessed on 05/08/04.
15. Westwood B, Westwood G. Assessment of newspaper reporting of public health and the medical model: a methodological case study. Health Promot Int 1999; **14:** 53–64.
16. Bartlett C, Sterne J, Egger M. What is newsworthy? Longitudinal study of the reporting of medical research in two British newspapers. BMJ 2002; **325:** 81–4.
17. Buttriss J. Scene Setting: who is the voice of nutrition in Britain? Proc Nutr Soc 2003; **62:** 573–5.

18. Cohen, J. A coefficient of agreement for nominal scales. Educ Psychol Meas 1960; **20:** 37–46.

19. MDGs vision 2020 (Trinidad and Tobago) http://www.sela.org/public_html/AA2K3/ENG/docs/Coop/Coop-Inter/Di26.htm. Accessed on 20/06/2004.

20. World Bank Approves $20 Million for HIV/AIDS Prevention and Control in Trinidad and Tobago http://web.worldbank.org/WBSITE/ EXTERNAL/NEWS/0,,contentMDK:20117058~menuPK:34463~page PK:3437 0~piPK: 34426~theSitePK:4607,00.html). Accessed on 20/06/2004.

21. McCombs ME, Shaw DL. The agenda-setting function of the press. In Shaw DL and McCombs ME (eds). The Emergence of American Political Issues: The Agenda-Setting Function of the Press. Saint Paul, Minnesota, West Publishing Co, 1977.

22. Health systems and services profile for Trinidad and Tobago Pan American Health Organization. http://www.lachsr.org/documents/ healthsystemprofileoftrinidadandtobago-EN.pdf). Accessed on 20/6/04.

23. Entwistle V, Hancock-Beaulieu MM. Health and medical coverage in the UK national press. Public Underst Sci 1992; **1:** 367–82.

24. Berelson B. Content Analysis in Communication Research. Glenco, Illinois, Free Press, 1952.

25. Potter W and Levine-Donnerstein D. Rethinking validity and reliability in content analysis. J Appl Commun Res 1999; **27:** 258–84.

26. Neuendorf KA. The content analysis guidebook. Thousand Oaks, California, Sage 2002.

27. Lombard M, Snyder-Duch J, Campanella Bracken C. Practical Resources for Assessing and Reporting Intercoder Reliability in Content Analysis Research Projects. http://www.temple.edu/mmc/reliability/. Accessed on 20/06/2004.

28. Oxman AD, Guyatt GH, Cook DJ, Jaeschke R, Heddle N, Keller J. An index of scientific quality for health reports in the lay press. J Clin Epidemiol 1993; **46:** 987–1001.

29. The DISCERN Instrument. http://www.discern.org.uk/discern_instrument.htm. Accessed on 20/06/2004.