

Medicines in the news

Content analysis of drug articles in four Vietnamese newspapers

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Abstract. The advent of market economy since 1986 in Vietnam has thrown the drug market into chaos with potential risks to consumers from unsupervised widespread self-medication. In the virtual absence of non-commercial drug information to consumers, the mass media may play a key role. The objectives of the study were to describe drug information in the Vietnamese press, particularly in terms of risk/benefit, using a combined journalistic-pharmaceutical coding instrument.

A quantitative content analysis was made of all articles ($n = 620$) on medicinal drugs, including traditional medicines, published 1993–1994 in the four Vietnamese newspapers ‘*Phu Nu Viet Nam*’ (‘Women in Vietnam’), ‘*Suc Khoe*’ (‘Health’), ‘*Dai doan ket*’ (‘Great Unity’) and ‘*Tien Phong*’ (‘Vanguard’).

As this is to the best of our knowledge the first study of its kind in a low-income country, the diversity of coverage in the newspapers as well as the sheer volume of drug articles were noteworthy findings. Almost half (44%) of the articles were about traditional medicines, 20% about anti-infectives, and 15% about gastro-intestinal/alimentary drugs. Over half of the articles on modern medicines dealt with drugs on Vietnam’s Essential Drug List.

Headline tendency was unbalanced with 39% positive, 55% neutral and 6% negative. Risk/benefit information was inadequate with information on side-effects provided in 12%, and on counter-indications in 13% of all articles. Exactly half (50%) of articles mentioned dosage, but only 2% drug price. Authors were mainly doctors, pharmacists and journalists. The four newspapers differed in profiles. ‘Health’ did the best job of providing drug information followed by the women’s newspaper, the youth paper and the senior citizen paper. However, in general, the relative paucity of information about side effects, counterindications, and drug prices, as well as the lack of independent journalistic drug reporting gives some cause for concern.

1. Introduction

In Vietnam, market policies since 1986 in the wake of ‘*doi moi*’ (literally ‘new change’) have led to an out-of-control drug market [1,2] with widespread unsupervised self-medication, particularly of antibiotics [3]. In the topsy-turvy world of the Vietnamese health care system, economic incentives cause untrained drug sellers to diagnose, and health workers to dispense drugs to citizens, who lack reliable sources of information about drug risks and benefits [4]. Drugs have become commodified, travelling beyond biomedical domains of knowledge into local realms of understanding, governed by different laws [5]. The ensuing gap between biomedical and local rationalities of medical and pharmaceutical practice is difficult to bridge, leaving the individual consumer ‘lost in a noisy marketplace’ [6].

In this situation, the mass media can potentially play an important role by providing drug information to improve rational drug use, but also critical independent journalist coverage of drug and health issues in a wider social context. Informing consumers about drugs and drug use is a key element of national drug policies. In the Vietnamese National Drug Policy (VNDP), the mass media is given a particularly strong responsibility in this regard [7]. However, implementation of the VNDP is in its infancy.

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This emphasis on public drug education is in line with a global trend in the 90s. This trend may, in turn, be seen as a response to developments, which have created a more volatile situation in terms of drug risk and safety, demanding more drug 'literacy' of consumers, as well as more drug communication and pharmacovigilance activities by all actors [8]. Such developments include: over-prescription of drugs by health professionals and over-consumption by the public; consumers bypassing the health facilities, turning directly to pharmacies; the development of a 'pill culture'; expansion of the private sector as a source of drugs, especially in developing countries [9]; market descheduling (or switching from prescription-only to over-the-counter status) of drugs; more Direct-to-Consumer-Advertising by the industry [10]; and demands by users/consumers and prescribers for more non-commercial drug information [11,12].

There are some 650 newspapers printed in Vietnam, a country where literacy rates in comparison to other developing countries is high, 84% for women and 93% for men, according to the 1989 census. Although circulation figures for newspapers are fairly low, each issue is typically read by many people. TV is becoming increasingly widespread, especially in the towns, and radio dominates in rural areas. Access to the Internet has recently been opened up, albeit with restrictions. All mass media are controlled by the State. The Press Law allows for a certain freedom of the press but is ambiguous, simultaneously listing a gamut of prohibited topics. Direct censorship as such seems rare. Party influence is however strongly exercised via regular meetings with newspaper editors. Press freedom increased after '*doi moi*' but the government stance has since oscillated between relaxed control and repression. Nevertheless, within current limits of expression, there is considerable diversity of form and content. Some newspapers, are both more modern and more outspoken than others, e.g., '*Lao Dong*' ('The Worker') and '*Dai doan ket*' ('Vanguard'), one of the newspapers in this study, which regularly feature investigative reporting about legal or social issues [13,14].

There are to our knowledge no studies of media drug information (as opposed to media drug promotion) in a low-income country. The aim of the current study was to contribute to filling this gap, describing characteristics of drug information in four important Vietnamese newspapers, particularly in terms of risk/benefit, assessing its appropriateness and discussing possible improvements.

2. Material and methods

2.1. Material

In 1995, a manual content analysis (CA) was carried out of all drug-related articles in four (see below) Vietnamese newspapers 1993–1994. CA is an accepted research technique designed for the objective, systematic and quantitative description of the manifest content of communication, and 'makes it possible to make replicable and valid inferences from data to their context' [15].

2.2. Inclusion criteria

Inclusion criteria were that the newspapers cover major target groups within the general public, and that the newspaper 'Health' be included, to allow for a comparison with a previous study [16].

2.3. Coding instrument

The years 1993–1994 was chosen as a particularly turbulent period for the Vietnamese drug market. In terms of 'pharmaceutical' and 'clinical' variables [17], the coding instrument was based on studies of

Table 1
List of variables

Pharmaceutical/clinical variables	Journalistic variables
ATC class*	Author
Brand name	Actor
Generic name	Placement
Indication	Size
Side-effects	Picture/illustration
Contra-indication	Article type
Price	Tendency
Dosage	Conflict/consensus
Manufacturer	
Source	

*Anatomical Therapeutic Chemical (ATC) classification system of the Nordic Council on Medicines [21] plus the classes 'traditional medicines' and 'drugs in general'.

drug advertisements [18,19], and on the standards for consumer Drug Information Sheets, published by WHO [17]. In addition, we added a number of journalistic variables (Table 1).

2.4. *'Phu Nu Viet Nam' ('Women in Vietnam'), published by the Vietnamese Women's Union*

Currently in Vietnam, there are three women's newspapers, the leading one being *'Phu Nu Viet Nam'* ('Women in Vietnam'), started in 1948 and published by the Women's Union five times per month. Between 1991 and 1992, the circulation increased from 17,000 to 110,000 copies. According to Vietnamese scholars, *'Women in Vietnam'* is considered trustworthy, giving a positive image of Vietnamese women [20]. An issue normally consists of 8 pages in black and white and colour. The paper regularly contains domestic and foreign news, health, sports, food, children, pregnancy, psychology, short stories, poems, readers' letters, as well as advertisements, e.g., for infant formula, beer, computers and other consumer items, or e.g., from family planning organisations or UNICEF concerning vaccinations.

2.5. *'Suc Khoe' ('Health'), published by the Ministry of Health*

In 1993–94, *'Suc Khoe'* ('Health') was a fortnightly publication issued by The Ministry of Health and called itself 'a publication for health protection guidance', i.e., focusing on prevention. It was and is mainly targeted at the general public but also at health care professionals, mainly at primary health care level. It has since branched off into three publications, been renamed *'Suc Khoe va Doi Song'* ('Health and Life') and given a more attractive layout with more advertising and now calls itself 'a forum to promote health for all'. Its influence as an organ of Ministry of Health belies its modest circulation (then 15,000–20,000). Most of the articles are written by the staff of pharmacists, doctors and journalists, and by leading specialists, often managers of specialised Institutes or Heads of National Programs in various medical fields, all under the Ministry of Health. Normally, each issue has eight pages.

2.6. *'Dai doan ket' ('Great Unity'), published by the Fatherland Front*

The name of the weekly newspaper *'Dai doan ket'* means 'Great (as in the whole of Vietnam) Unity'. It is published in 50,000 copies by the Fatherland Front – a central organising force in Vietnamese society –

and principally targets senior citizens. It is printed in 2 colours, has few pictures and contains domestic as well as foreign news, health, readers' letters, financial news, legal news, sports news, and advertisements. The focus on the regular health page is on preventive medicine via diet and exercise.

2.7. 'Tien Phong' ('Vanguard'), published by the Central Youth League of Vietnam

'Tien Phong' ('Vanguard') is a general weekly newspaper of 16 pages, published by the Central Youth League of Vietnam, containing both foreign and domestic news, poems, short stories, cultural news, sports, funny stories, cartoons and advertisements. In 1993–94, the paper also published many 'human interest' stories and two pages of advice and stories on love and romance. It also contains many 'bizarre' items, such as about Siamese twins, a chess prodigy, or shoes with built-in springs.

Originally, two pharmacists in Hanoi tested the instrument in a pilot study. Then, the first author (DF) did the coding and data collection together with an expert Vietnamese medical translator. In addition, to ensure data accuracy, the coding outcome was reviewed a second time by DF together with a Vietnamese sociologist (VPNT) and a Vietnamese pharmacist. With this procedure, we identified and coded 620 drug articles constituting the material for analysis.

In terms of article type, articles were coded as 'rewrites', if a secondary source, typically a foreign journal, popular or scientific, was mentioned. They were coded as 'features', if they contained an element of independent reporting, as 'news stories', if initiated by current events, as 'question & answer' (Q&A), if referring to 'a request by our readers', or written in Q&A form, and as 'health advice', if they contained 'timeless' health guidance. The 'other' category encompassed, e.g., a poem, two historical stories without attribution and a humorous article. The tendency (positive, negative or neutral) of the articles was coded according to the headline alone. Headlines were coded as neutral if they simply contained a drug name, a statement, or a question. They were coded as positive if they contained a positive value judgement of the drug, or simply linked the drug with an indication, and as negative, if they contained a negative value judgement of the drug or linked the drug with, e.g., a potential side effect or a warning, e.g., of dependence, or interaction.

3. Results

3.1. Ranking by ATC class

According to the ranking order by ATC class (including a general drug category and a category on traditional medicines) mentioned in the four newspapers (Table 2), the three most frequent groups of drugs mentioned are traditional medicines, general anti-infectives and drugs for alimentary/general metabolism. Notable is the low level of general articles about drugs, e.g., legal, financial, and policy issues.

3.2. Traditional medicines

Since traditional medicines constitute the largest group of articles, a sub-analysis has been made, using categories emerging from various Vietnamese sources [22,23]. These categories enable a more detailed classification but clearly differ from those used in the West, e.g., in terms of the sense of the concept 'scientific'. The analysis showed that only two (2) of the TM mentioned, both appearing in 'Health', were 'natural drugs', according to Swedish legislation [24].

Table 2

Absolute and %-wise frequencies (Fr./%) of articles in the four newspapers, separately and altogether, by ATC-class (plus 'traditional medicines' and 'drugs in general')

ATC main group and (class)	Women in Vietnam		Health		Vanguard		Great unity		Tot. freq.	Tot. %
	Fr.	%	Fr.	%	Fr.	%	freq.	%		
Total	73	100	405	100	52	100	90	100	620	100
Traditional medicines (TM)	29	40	175	43	13	25	54	60	271	44
General anti-infectives (J)	12	16	92	23	16	31	4	4	124	20
Alimentary tract/metabolism (A)	11	15	66	16	4	8	14	16	95	15
Central nervous system (N)	3	4	13	3	4	8	7	8	27	7
Drugs in general (Z)	3	4	19	5	2	4	1	1	25	6
Genito-urinary syst./sex horm. (G)	9	12	1	0	4	8	0	0	14	2
Antiparasitic products (P)	1	1	9	2	0	0	2	2	12	2
Systemic hormonal drugs (H)	1	1	6	2	3	6	0	0	10	2
Respiratory system (R)	1	1	8	2	0	0	1	1	10	2
Antineoplastic/immunosuppr. (L)	1	1	1	0	6	12	1	1	9	1
Cardiovascular drugs (C)	0	0	4	1	0	0	4	4	8	1
Sensory system (S)	1	1	2	1	0	0	1	1	4	1
Dermatologicals (D)	1	1	3	1	0	0	0	0	4	1
Musculo-skeletal (M)	0	0	4	1	0	0	0	0	4	1
Blood/blood-forming organs (B)	0	0	1	0	0	0	1	1	2	1
Various (V)	0	0	1	0	0	0	0	0	1	0

An article may mention several plants. The number of actual plants (not plant categories!) mentioned in Table 3 is larger than the number of TM articles in Table 2. Moreover, each plant mentioned may belong to more than one of the six categories in Table 3 (TRI, TME, etc.), thus total percentages do not equal 100. It may be mentioned in classical medicine texts (TME), as well as suitable for growing in the garden (GAR). The numbers thus represent the sum of each mention of category, in whatever combination, except for the POP category.

3.3. Anti-infective drugs

Since anti-infectives are the second most common type of drugs mentioned in the articles, the 124 articles on anti-infectives have been separately analysed thematically. Of these, 10 articles – in three newspapers ('Great Unity' excepted) – were of a 'general' nature concerning the dangers of overuse of antibiotics, of poly-pharmacy, of allergies, of use in children and the elderly. Half (64) of the articles were about vaccines, of which 47 in 'Health'; 38 articles were about anti-infectives for systemic use, of which 32 in 'Health', 2 articles about anti-mycobacterials for systemic use, and 10 articles about anti-virals, 9 of them about AIDS drugs.

In 'Health', the topics of anti-infective articles for general use were typically more specialised, such as treatment of syphilis, condyloma, tuberculosis, non-gonorrhoeal urinary tract infection, etc.

3.4. Essential drugs

According to the Vietnamese 1989 Essential Drug List, valid for the period of 1993–94, over half of the Western medicines mentioned, were essential drugs.

Table 3

Number of plants in various categories ($n = 418$) mentioned in articles on traditional medicines (TM). For explanation see legend. Please note that due to some overlapping, ratios do not add up to 100%

TM drug class	Newspapers				Total	% ($n = 418$)
	Women in VN	Health	Vanguard	Great Unity		
TME	47	116	0	26	189	45
POP (non-TRI; non-TME)	19	113	6	33	171	41
GAR	2	52	0	8	62	15
TRI	2	35	0	3	40	10
Dubious	4	5	3	9	21	5
NC	1	14	0	1	16	4
WIL	0	2	0	1	3	1
NL	0	2	0	0	2	1

TRI – tried scientifically; GAR – can be cultivated in the garden; POP – popular experience/beliefs, not yet confirmed by trials; TME – in Classical Traditional Medicine Books (especially Chinese); WIL – grows wildly in nature, not cultivated; NL – Naturläkemedel, ‘natural drug’, according to Swedish legislation; NC – could not be classified; Dubious – classified as inappropriate advice.

Table 4

Tendency of headlines towards drugs (in %)

Tendency	Newspapers				Total
	Women in VN	Health	Vanguard	Great Unity	
Positive	45	33	58	47	39
Negative	8	6	14	2	6
Neutral	47	60	29	51	55
Total	100	99	101	100	100

3.5. Tendency of article headline

The tendency (positive/negative/neutral) of the article headlines towards drugs is shown in Table 4.

Neutral and positive headlines dominate the material. The distribution of headline tendency for each newspaper is described below for the three most common ATC classes, traditional medicines, anti-infectives and drugs for alimentary treatment or metabolism with a caveat regarding conclusions, that the absolute figures are small.

In terms of these three classes, ‘Women in Vietnam’ was most positive to alimentary/metabolism drugs (63%), ‘Vanguard’ and ‘Great Unity’ most positive to traditional medicines (85% and 63%, respectively), and ‘Health’ roughly equally positive to all classes (34–39%).

Looking instead at the distribution of positive headlines per newspaper, we find that in all the papers except ‘Vanguard’, the largest fraction of positive headlines were for traditional medicines. In ‘Vanguard’, the largest fraction of positive headlines were instead for anti-infectives, principally HIV/AIDS drugs.

3.6. Negative headlines

As the issue of risk/benefit is of particular interest in this study, and there were comparatively few negative headlines on drugs, these were analysed separately. The analysis shows that among the six neg-

atively headlined articles for 'Women in Vietnam' (8%), 2 are general warnings about using antibiotics in old people, and allergy to drugs in general, and 4 involve side effects (the cortisone preparation K-cort, the breast cancer–oral contraceptive link, plant antihelmintics and nasal drops, and teeth discolouring due to tetracyclines). In 'Great Unity', the 2 negative headlines (2%) refer to the danger of taking vitamin C injections to improve the skin, and general risks of antibiotic use in children. In 'Health', there are 26 negative headlines (6%), of which 1 refers to doping, 5 to interaction (ampicillin–oral contraceptives, penicillin–chloramphenicol, erythromycin–theophyllin in asthma therapy, alcohol and diazepam, various drugs and oral contraceptives), 7 to overdose (insulin, tranquillisers, vitamin A, vitamin A and D, Polydexan eyedrops, antibiotic abuse in general and in children), 1 to addiction (tea buds), 8 to side effects (drugs and driving, nose drops, vaccines in children – 2 articles, tetracyclines – teeth discolouring, Polydexan eyedrops, cortisone, malaria prevention), 1 to ethics (refusal to test AIDS vaccine in Thailand), and 1 to resistance (gonorrhoea and penicillin).

In 'Vanguard', of the 7 negative headlines (14%), 4 refer to addiction (diazepam, alkaloids, the general 'drug chewing calamity', morphine from a drug factory reaching the black market), 2 to doping, and 1 to ethics (the debate in the USA on the abortifacient RU486).

3.7. *Type of article*

The coding categories of article type were 'health advice', 'rewrite', 'news', 'Question and Answer' (Q&A), 'feature', and 'other'. Overall, the most common article type – 50% of all articles – was 'health advice'. Most of the articles on traditional medicines fell into this category. In second place came 'Q&A' (18%), followed by 'rewrites' (15%) of articles from medical/scientific or general news journals, (14%) 'news' articles, with 'features' lagging behind at 3%, and a miscellaneous 'other' category (1%).

For each newspaper separately, however, the distribution of article types varied considerably. 'Health' had the highest rate of 'Q&A' articles (23%) with 'Great Unity' and 'Women in Vietnam' about equal, 13% and 10%, respectively, and 'Vanguard' the lowest with none. 'Vanguard' was the most 'news'-oriented with 23% articles in that category with the other papers trailing at 8–15%. 'Vanguard' also had the highest number of 'rewrites', i.e., articles based on other mass media sources, at 65%, with the other three papers far behind at 8–19%. Own 'features' were rare at 2–8% in all newspapers. The health advice articles were roughly equally frequent in 'Health', 'Women in Vietnam' and 'Great Unity' (52–62%) with 'Vanguard' at only 2%.

The style of drug information was generally more detailed but more schematic in 'Health' than in the other newspapers, and often read simply like a text from a textbook or a pharmacopoeia.

3.8. *Type of authors*

Author information was lacking for 99 articles in 'Health'. Notable is the considerable variation between newspapers for most of the variables. Doctors dominated in 'Women in Vietnam' (51%), whereas in 'Health', doctors and pharmacists penned roughly the same fraction of articles, 39% and 34%, respectively. Journalists wrote the lion share of the articles in 'Vanguard' (71%), while both doctors and journalists dominated in 'Great Unity' (31% and 38%, respectively). Traditional practitioners signed a record 19% of articles, in 'Women in Vietnam', but none in 'Vanguard'. Furthermore, it was not uncommon for an article to be attributed to an ordinary 'reader'. Manufacturers were only authors of a single article in the material.

3.9. Indications, side effects, and contraindications

The frequencies of articles mentioning indications, side effects, contraindications, price and dosage information are given in Table 5.

Side effects were not mentioned at all for four classes of drugs – relating to the blood/blood-forming organs, cardiovascular system, sensory system and the category of ‘various’ drugs, and only in 7/271 (3%) of traditional medicine articles.

Comparisons between groups should be done with caution due to the great differences in the denominators. However, it can be seen that for most classes of drugs, although absolute frequencies are low, side effect information levels are well above the overall average of 12% (from Table 5), the explanation being the quantitative dominance of the TM group, pulling the average down. Notable is also the relatively low rate for the anti-infectives’ group.

Table 5
Frequencies of some clinical/pharmaceutical variables

Variables	Newspapers				Total (<i>n</i> = 620)
	Women in VN	Health	Vanguard	Great Unity	
Indications	68 (93%)	392 (97%)	49 (94%)	90 (100%)	599 (96%)
Dosage	31 (43%)	262 (65%)	10 (19%)	7 (8%)	310 (50%)
Contraind.	12 (16%)	59 (15%)	4 (8%)	6 (7%)	81 (13%)
Side effects	18 (25%)	38 (9%)	13 (26%)	6 (7%)	75 (12%)
Price	1 (1%)	11 (3%)	2 (4%)	0 (0%)	14 (2%)

Table 6

No. of articles mentioning side effects/ total no. of drugs in each ATC class
(plus ‘traditional medicines’ and ‘drugs in general’)

ATC class (plus TM and a general class)	No. of articles mentioning side effects/total no. of drugs in each ATC class
Respiratory system (R)	5/10
Dermatologicals (D)	2/4
Systemic hormonal drugs (H)	5/10
Central nervous system (N)	12/27
Genito-urinary syst./sex horm. (G)	6/14
Antiparasitic products (P)	3/12
Musculo-skeletal (M)	1/4
Antineoplastic/immunosuppr. (L)	2/9
Drugs in general (Z)	4/25
General antiinfectives (J)	17/124
Average for all classes	12/100
Alimentary tract/metabolism (A)	11/95
Traditional medicines (TM)	7/271
Blood/blood-forming organs (B)	0/2
Various (V)	0/1
Sensory system (S)	0/4
Cardiovascular drugs (C)	0/8

3.10. Sources

Many articles do not mention sources, but where they are mentioned, sources are often multiple. Thus we have not calculated the number of articles mentioning sources but rather the frequency of sources mentioned. The most commonly cited source in 'Women in Vietnam' and 'Vanguard' is 'other mass media' (21% and 62%, respectively), and in 'Health' and 'Great Unity' 'traditional medicine treatises and/or popular experience' (14% and 26%, respectively). Doctors are cited in 1–18% of articles and researchers in 3–31% of the different newspapers. The government is only cited in 1–6% of articles in the different newspapers. Party, provincial and district authorities, people's committees, manufacturers, pharmacists, donors, and NGOs are quoted in less than 2% of articles. International organisations are quoted in 1–3%.

3.11. Conflict/consensus

Articles were coded in terms of whether opinions expressed in the article in relation to the drug(s) in question were in agreement (consensus) or at odds (conflict). The frequencies were for 'Women in Vietnam' 18% conflict, 75% consensus, 7% ambiguous, for 'Health' 5% conflict, 92% consensus and 3% ambiguous, for 'Vanguard' 19% conflict and 81% consensus, and for 'Great Unity' 7% conflict and 93% consensus.

4. Discussion

Some striking findings in this study are the sheer magnitude of drug information in the Vietnamese press, not previously documented, the diversity of drug reporting profiles between different newspapers in the face of overall state control, and the low frequency of articles on general drug-related topics. The lack of information on side effects, counterindications, prices and information sources used is disturbing. The average rate of 12% side effect information is considerably lower than, e.g., in a Dutch study, which found that 37% of 255 drug articles in family magazines listed side effects [26], and comparable to results of drug advertisement studies, e.g., 13% in a study from Sri Lanka [19]. In particular, only 3% of articles on traditional medicines mentioned any side effects at all.

The fact that almost half (44%) dealt with traditional medicines seemed to mirror national policy, which encourages the complementary use of Western and traditional medicines and affords them equal status [26]. This emphasis can in part be seen as an expression of national pride, self-reliance and traditional values with deep historical roots. A recent WHO assessment notes that 'Viet Nam possesses an old system of traditional medicine. Medicinal plants have made a tremendous contribution to the national health...' [27].

Since documentation is lacking for most of the plant drugs mentioned in the material, it is not possible to assess to what extent they conform to strict scientific standards of safety, efficacy and cost-benefit. In an attempt to reach a more culturally sensitive assessment however, we applied a more detailed classification using Vietnamese sources showing that 10% have been tested in Vietnam, and that additionally 45% were well-known in terms of safety and efficacy from use over centuries within the Sino-Vietnamese medical tradition. These articles then, might arguably be considered appropriate as judged by the standards of Vietnamese health and media professionals.

It is however, less clear to what extent articles recommending the 41% of plants in the 'popular' category, the 15% for growing in gardens or the 1% for plants in the wild are appropriate, and the 5% 'dubious' are clearly inappropriate.

We now turn to the quantitatively speaking second largest drug class – anti-infectives. In 'Health', the topics of these articles are of a specialised nature, which in the West would be reserved for health professionals. A possible interpretation could simply be pragmatism. Since the drugs are available over the counter (despite regulations to the contrary) [2], and since resistance is a growing problem, 'Health' and the other newspapers provide information for their use, even by laymen. WHO data show that, e.g., penicillin resistance to *N. gonorrhoea* increased 1992–1995 in Vietnam from 55 to 98% [28], and resistance to other antibiotics is growing rapidly [29].

The high frequency of vaccine articles, constituting half of the anti-infectives' articles, is medically rational and positive in terms of a focus on prevention, but may simultaneously be seen as ideologically oriented propaganda for government and donor vaccine campaign activities. In a previous qualitative study of 'Health', we noted the same strong promotion of prevention, combined with political propaganda [16]. The 18 HIV/AIDS articles (15% of the anti-infective articles) are timely, given the rapid spread of the disease in Vietnam [30].

Much of the characteristic profile of the 'Health' newspaper can be explained by its attempts to satisfy both its target audiences: consumers as well as public health professionals, chiefly at primary health care level. Here, concessions to lay readers can be seen e.g., in terms of the high rate of articles on traditional medicines, and the highest rate of the newspapers studied (23%) of articles in the Q&A category, reader contact being an explicit feature of editorial policy [16]. The specialised topics, e.g., on anti-infectives and the 'dry', matter-of-fact style (often reading like a textbook or pharmacopoeia) would suggest a professional audience. But this too may be an expression of pragmatic public education on the appropriate role of antibiotics in Vietnam (in line with the reasoning above), of major importance also globally [31].

'Health' dominated quantitatively (65% of all articles) and was the only newspaper with articles on drugs in every ATC class. If a high rate of 'neutral' articles be regarded as a measure of balanced drug information, it was the most balanced with 60% in this category. It was also the most 'scientific' in terms of the highest rate of TRI articles within the traditional medicine category, and provided above average rates of dosage information. Health advice dominated over news stories, features, and rewrites. The rate of articles portraying conflict was the lowest of all papers. Viewed in a positive light, these data suggest that 'Health' is aware of its unique responsibility to provide comprehensive drug information, viewed negatively, it is also bound by its role as a megaphone for the government to promote State activities and downplay conflict.

'Women in Vietnam' is visibly targeted at women readers, having, e.g., the highest rate of articles on genito-urinary system/sex hormones (mainly oral contraceptives), although conclusions must be drawn with caution as the absolute numbers are low. It also has by far the highest rate of tried and tested (TME) TM articles – 63% (calculated from Table 3), and the lowest rate of 'popular' TM articles, though the rate of articles for scientifically tried (TRI) TM drugs is also low at 3%. Together with 'Vanguard' it provides the highest rate of side effect information (25%), and relative to the other papers high rates of information on indications, dosage, and counterindications, though not price. Doctors write most (51%) of the drug articles, which also explains the dominance (53%) of 'health advice' articles. The second highest rate of articles presenting conflicting views was also found in the women's newspaper. In summary, the paper does a relatively good job of providing responsible drug information, adapted to its target audience and with a certain amount of journalistic integrity.

Again, the conscious design of drug information for the target audience is seen for the youth paper 'Vanguard'. Here one finds, e.g., the most polarised coverage in terms of the lowest number of neutral headlines, and consequently the highest rates of positive and negative ones. Predictably, too, young people being more modern in their attitude to medicines [6], 'Vanguard' is the only paper, where positive headlines dominate for anti-infectives, rather than for traditional medicines. It had the highest rate of side effect and price information. However, interpretation is tricky, as for these last-mentioned variables, the absolute figures are small. 'Vanguard' was extreme in other ways as well. It had the highest fraction of articles written by journalists (71%), which could suggest 'independence'. This also explains why it has a (marginally) higher frequency of own feature articles (8%) than the others and dominates in terms of 'news' (23%). However, it is also the newspaper most heavily dependent on other mass media sources (65% 'rewrites'), probably due to the low level of professional health journalism knowledge.

'Great Unity' has the highest frequency of articles about 'popular' traditional medicines, 41% (Table 3), and the highest rate of health advice articles, 62%. Here the newspaper may be trying to satisfy an elderly readership, which is arguably more positive to traditional medicines [6]. However, it supplies the least pharmaceutical/clinical information of all the newspapers, e.g., 7% side effect information and no price information. This is perhaps somewhat surprising given its (recent) track record of investigative reporting on, e.g., legal issues [14] and suggests that, as is the case in most of the world, this critical approach is not applied to the area of drug reporting.

The studies we have found in the literature, specifically analysing drug-related editorial, rather than promotional content, are all from industrialised countries. One Australian study found an accuracy rate of 77.6% for articles in women's magazines on drugs and environmental effects on pregnancy [32], using current database information as a bench-mark.

Recently, stringent standards have been proposed for assessing the scientific quality of health articles in the popular press [33], mainly focusing on the extent to which an article allowed accurate inferences about the applicability, strength of evidence, and magnitude of effects for the results presented. Our instrument did not allow for this type of assessment. In general, this type of information is often lacking, as shown in a study of Norwegian newspapers [34].

In terms of tendency, various studies present conflicting results, some suggesting a dominance of positive rather than negative or neutral articles or headlines [25,35], others on the contrary more questioning/negative [36,37] or dealing more with side effects [38].

In comparison, the headline tendency profile in the Vietnamese material, particularly the high frequency of neutral headlines, is unusual, perhaps unique. Yet, while the many neutral headlines may suggest a balanced approach, it is also a result of a culturally specific (?) editorial policy in that many headlines simply consist of a drug name, or a question, and were then coded as 'neutral'. The simultaneous low figures for negative headlines suggest an unduly uncritical approach in the Vietnamese press, which can not be considered appropriate.

Comparing the rank order of ATC class drugs in our study with those found in van Trigt's study [25], we find a similar trend in terms of anti-infectives (no. 1 in the Dutch study, no. 2 in our study) and CNS drugs (no. 2 in the Dutch study, no. 4 in ours), but divergence in terms of the dominance of traditional medicines and gastro-intestinal drugs in our study. This can be explained by the central role of the digestive system in Vietnamese and Chinese medicine as well as the importance afforded to traditional drugs.

In terms of sources, a surprising result was perhaps that official sources like the Party and the government seldom were cited at all. Given that the media are state-controlled, this does not mean that these

bodies lack influence but rather that the drug reporting hardly made any direct reference to national policies, critically or otherwise.

Aside from the drug education aspects already touched upon, this lack of independent, active journalistic reporting might possibly be explained with reference to Walt's [39] definition of 'high'- or 'low-politics' issues. The theory should predict that if Vietnamese journalists viewed drug issues as government-prioritized, and thus 'high-politics', they would tend to be less critical, e.g., avoiding the example of health journalists in other countries in the region [40]. Indeed, there was a lack of controversy in the Vietnamese drug articles with only 5–18% portraying any kind of conflict. Comparable data for this variable have only been found from the unpublished Swedish study, which showed slightly higher figures, with 25% of 216 drug articles portraying struggle/conflict [37]. However, this explanation seems far-fetched for several reasons. The National Drug Policy indicating the government 'line' was not passed until 1996, and medical journalists interviewed both by the principal author (DF) in 1995 as well as in another study [41], did not spontaneously mention drug issues as highly prioritized. A more plausible explanation is simply a lack of professional health journalistic competence in Vietnam. In the last few years, this problem has started to be addressed by various donors, but much more needs to be done.

The research instruments used in previous media drug studies are designed to primarily capture either *medical* or *journalistic* features. While our instrument is more balanced, it needs further development to be able to assess to what extent media drug information satisfies the needs of consumers for both attractive, accurate media drug information, and critical coverage of the many broader societal issues, which determine drug risk and safety. Experiences e.g., from Bangladesh [42] and the Philippines [40] show that media coverage of drug issues can significantly affect National Drug Policy implementation. In the WHO list of indicators for assessing NDP implementation [43], there is room for indicators addressing media information.

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