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Abstract
Concern about commercial influences on health care is prominent in the medical literature, but has remained in the background of nursing education and practice. This review of the nursing literature explores the perspectives of the nursing community regarding pharmaceutical industry. This article presents a range of views, from favourable to highly sceptical. The nursing literature has yet to effectively address the pervasive impact of the pharmaceutical industry on health care. Available evidence indicates that many nurses are uncritically accepting of industry influence on their education and practice.

Key Words gift-giving, interests, nursing continuing education, pharmaceutical industry, sponsorship

Soft Targets: Nurses and the Pharmaceutical Industry

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Introduction

"Our Special Projects Division produces a wide portfolio of therapy and topic-specific materials … available for sponsorship by companies who wish to promote their products or services, while visibly supporting nurse education,"[1] invites the journal of the United Kingdom Royal College of Nursing.

The commercial sponsorship of nursing education exemplified by this advertisement reflects the fact that nurses have increasing power to choose products and services, and to influence choices made by medical and other colleagues.[2] Prescription pharmaceuticals provide a notable example of how nurses have become, as proclaimed above, a desirable target for a powerful industry.

This industry has been robustly critiqued in the medical literature for exploiting patients and physicians using a range of techniques: direct-to-consumer advertisements (DTCA),[3-6] sponsored teaching materials,[7] advertising in professional media,[8,9] research funding,[10-14] ghost-writing,[15,16] gifts, free meals and travel[13,17,18].

The nursing literature has yet to pay much attention to the expansive reach of the pharmaceutical industry into the nursing profession. In this article, we examine some of the key literature on the influence of drug companies upon nurses, consider the limitations of this literature, and define a strategy for heightening awareness and strengthening the skills of nurses to manage the impact of commercial interests.[19]

Literature review

We searched MedLine and CINAHL databases without date restriction in May 2007 using the terms "pharmaceutical industry," "drug sales," "direct-to-consumer," and "pharma-

ceutic*" and restricted to nursing journals. We searched the same terms without the nursing journal restriction, combined with the truncated search terms "nurs*" and prescri*." A search combining the term "nurs*" with "gift," a hand search, and references from colleagues completed our search.

We included all articles making reference to nursing's relationship to drug companies and those that included the perspectives of the pharmaceutical industry on this issue. As our intention was to understand the field, we examined all types of article, from empirical research papers to pure opinion.

Thirty-two articles met our inclusion criteria. Of these, seven were empirical studies (summarized in Table 1), two were theoretical, using anthropological or ethical frameworks to describe the implications of the gift exchange, and 23 were perspectives, commentaries, opinions, and non-systematic (narrative) reviews. Sixteen articles were from

Table one – Summary of empirical findings regarding pharmaceutical industry influence on nurses

Methodology	Sample	Findings	Reference
Survey 35-item questionnaire	347 MHN (76 male)	290 (84%) accepted PSRs meeting with clinical teams 161 (46%) accepted PSRs meeting with individual MHNs 3 (8.6%) agreed that MHNs should not attend events focusing on specific drugs 305 (88%) not opposed to receiving information and gifts 67 (19%) believe the clinical environment should be free of "gifts."	[46]
Survey 12-question questionnaire	221 NP	82%* believed DTCA provides "patient education" 94%* had patient requests resulting from DTCA 57%* believed samples from PSRs affected their prescribing decisions 52%* did not feel "pressured" to prescribe in response to patient requests	[26]
Survey	91 Nurse prescribers	50%* state that information from industry had influenced their prescribing	[67]
Survey 14-item questionnaire	51MHN (8 male)	A "majority"* never had formal guidance regarding interaction with PSRs. PSRs said to provide a variety of services "valued" by respondents*	[35]
Semi-structured interview	22 Nurse prescribers	11 (50%) used representatives from industry as source of prescribing information	[32]
Survey 55 item questionnaire (also administered to medical and pharmacy students for comparison)	17 NP students (2 male)	Poor knowledge of both industry marketing (average 2.9/10 multiple choice questions correct) and professional ethics (average 9/16 true-false questions correct) Frequent interaction with PSRs (average 10.4 contacts per month); considerable use of and confidence in information provided by PSRs; general willingness to accept and use drug samples from PSRs for both clinical and personal use	[34]
Interview	6 NP	4 (67%) believed that free samples might influence their choice of prescription 4 (67%) got information from PSRs 6 (100%) had attended industry-sponsored conferences 5 (83%) had accepted gifts.	[33]

Abbreviations:
* = raw data not provided
DTCA = direct-to-consumer advertising
MHN = mental health nurse
NP = nurse practitioner
PSR = pharmaceutical sales representative

nursing journals, nine were from nurse practitioner journals, two were from medical journals, and five were from multi-disciplinary journals.

From these 32 articles, we identified and grouped topics and concerns, and positioned these relative to debates in the medical literature about the influence of the pharmaceutical industry upon patient and professional education, gift giving, DTCA, provision of free drug samples, and other determinants of prescribing practice.

Results

Balance of criticism versus support

Given the vociferous debate in the medical literature, we anticipated positioned papers which would take clear stances for or against the involvement of the pharmaceutical industry in the nursing profession. Such a dichotomy was not evident in the articles we located. Of the 32 articles, thirteen expressed or reported serious concern about the role of the pharmaceutical industry, and four were clearly industry-friendly. The remaining publications either expressed mild concern about the industry, or viewed the support of the pharmaceutical industry as generally favourable, or identified both the harms and benefits of the pharmaceutical industry's involvement in health care.

Direct-to-consumer advertising

Seven articles address DTCA, three of these providing overviews and identifying consequent problems for patient-clinician communication. The overviews draw upon the medical literature, and lament the scant research available to assess DTCA's impact on nurses,[20-22] but offer limited criticism. One of these focussed on presenting a balanced report of the benefits and harms of DTCA, presenting a number of arguments both for and against the practice, but concluding with the view that DTCA might benefit patients by prompting them to seek medical attention, and suggesting that a "balance" is required.[21]

An opinion piece, written by health advocate Charles Inlander for a nursing economics journal, praises DTCA as an antidote to medicine's self-interested reluctance to share information.[23] Another, written by employees of the industry, speaks of guarding the line between promotion and education, but not surprisingly concludes that the industry has an important role to play in patient education – one that these authors hope will expand.[24] Three articles encourage health care professionals to work with the pharmaceutical industry to promote accurate patient information, and not to be predisposed against DTCA.[22,25,26]

Professional education

Many of the articles (10/31) draw attention to the substantial role that information from the pharmaceutical industry plays in the education of nurses.[24,27-35] Sponsored professional education, drug samples and information, small gifts, and patient services are portrayed as beneficial, even though caution is advised in their use – unethical behaviour is cast as possible, but exceptional.[30,36] DeSilet, nursing educator, recommends robust professional guidelines and accreditation as safeguards.[29]

Samples and gifts from, or contacts with, pharmaceutical sales representatives

Fifteen of the articles consider pharmaceutical sales representatives (PSRs) and/or their provision of drug samples to prescribing nurses. In an advice column to nurse practitioners, lawyer Cathy Klein acknowledges evidence that provision of samples influences medical prescribing, and increases rather than decreases costs, but also views pharmaceutical representatives as an important source of practical guidance and information for nurses.[37] Alexander-Banys, in a guest editorial to the *Journal of Pediatric Health Care*, starts by acknowledging and appreciating the pharmaceutical industry's support of nurse practitioners, then criticizes the industry for failing to court nurse practitioners (NPs), or to make reference to them in DTCA as they do physicians. This, the author suggests, reinforces traditional perceptions of the latter as the credible provider of patient care, to the detriment of the NP role.[38] In an editorial exchange in the *Nurse Practitioner*, student family nurse practitioner Sarah Sidiqi argues that NPs may be unwitting victims of the pharmaceutical industry's commercial agenda,[39] but receives a sceptical response from the editor who questions the evidence that NPs have been approached inappropriately in the way that physicians have, and points out that NPs are generally ignored by the industry.[40] A pilot interview study of six NPs found that all believed pharmaceutical companies influenced their prescribing, with both positive and negative consequences.[33] A survey of 221 oncology NPs found that over half (57%) of respondents viewed the provision of sample drugs as having affected their prescribing choice.[26]

Many articles conclude that small gifts from PSRs are acceptable. Davies and Hemmingway, both nursing educators, suggest such gifts should not exceed £5 [28] while an Editor of *The Nurse Practitioner*, Marilyn Edmunds, as well as

clinical nurse specialist, Patricia O'Malley, see $US100 as the top range for such gifts.[30, 41] Not surprisingly, a "medical writer" with "12 years' experience in pharmaceutical sales training," writing for *Advance for Nurse Practitioners* refers to promotional objects as a normal part of professional practice and fails to offer any critical consideration of the gift or its consequences.[31] Melodie Young, president of the Dermatology Nurses' Association, mirrors this approach in her article which promotes PSRs as an important support for nurses in *Dermatology Nursing*.[36]

Monaghan and colleagues used a cross-sectional survey to determine that NP students (n=17) had both more positive attitudes towards PSRs and more contacts with them than pharmacy students (n=54).[34] Similarly, in a large survey of mental health nursing students at two universities in the United Kingdom, 88% (305/347) believed it was acceptable to receive some form of gift from industry.[41] Over half (57%) of the students believed that pharmaceutical representatives did not always give unbiased information but thought that they and mental health nurses in general would be able to detect any bias. Only 20% believed that the clinical environment should be free of promotional objects. A study of 51 psychiatric nurses reported that an unspecified "majority" had received no guidance about working with the pharmaceutical industry.[35]

Three industry-friendly articles,[24,31,36] two of which were written by previous or current employees of the pharmaceutical industry,[24,31] applaud the role of PSRs, noting their role in education. Whilst the authors' history of working for industry is described, this history is presented as a credential for, rather than risk to, the credibility of their claims. Willis, in her article on career options, recommends the pharmaceutical sales force as a career option for nurses and uncritically equates pharmaceutical sales to promoting solutions to patients.[42]

Concern about the pharmaceutical industry

Thirteen of 31 articles express or report unequivocal concern about the risks to practice presented by the pharmaceutical industry. Nursing professor Lisa Day's theoretical discussion of gift-exchange argues that any gift, however small, obligates recipients, resulting in unwanted debt. Such debt may be repaid by prescribers and those influencing them.[43]

A similarly critical view of the industry is apparent in two general news articles reporting current events and describing concerns about drug companies' influences on nurses voiced by a union leader, and by a range of nursing, pharmacy and medical experts speaking to the UK House of Commons about drug company marketing strategies.[44,45] Lecturers in mental health nursing, Ashmore and Carver are particularly sceptical about supposed benefits of information provided by industry, and point out that mental health nurses may be particularly vulnerable to pharmaceutical company advertising and 'clinical support'.[20,46] Nurse ethicist Crigger's assessment of pharmaceutical promotion and NP decision-making offers a critique of the industry, and argues for guidelines to reduce potential harms, but is diluted by PSR Bennison's counter-argument in the same article.[47]

Four non-systematic narrative reviews address nursing education, and how guidelines and professional responsibilities may help to shift nursing education from commercial to professional sources of information.[28,41,48,49] Many of these articles point out the ethical challenges of pharmaceutical gift-giving but offer few, if any, solutions. There is a comfortable sense that nurses, once alerted, will not be "caught" by marketing practices, that skills central to the nursing profession inherently provide nurses with the ability to evaluate information effectively,[28,48] that ethics committees will give adequate guidance,[50] and that guidelines or codes will prevent the problem.[47,49] A strongly-worded debate between a sceptical NP and a PSR concludes with vague references to guidelines and raising awareness.[51] Sidiqi's letter to the editor of *The Nurse Practitioner* is just as strongly-worded, but similarly, is quickly deflated by the editor's comments about NPs being unlikely to get "caught" in the same way as physicians.[39,40]

Remarkably, none of the articles from the nursing literature reviewed here included author disclosure about possible competing interests. Over the past two decades, medical journals have increasingly required authors to declare competing interests, as these are recognized as potential sources of bias in the collection, analysis and interpretation of data.[52] As we have seen, nurses are subject to many of the same conflicts of interest as physicians, yet the nursing literature lacks even this most basic means of detecting possible bias.

Discussion

Nursing education fails to prepare graduates to deal with pharmaceutical promotion. From the scant empirical work available, many nurses would appear to accept promotional material uncritically. Nurses, just like physicians, might benefit from understanding marketing and persuasion.[19]

Nurses should be encouraged to re-evaluate the educational benefits of promotional information, which is carefully

selected, prone to bias, and hardly likely to be as beneficial as many believe.[53,54] Similarly, they should reconsider the presumed educational benefit and lack of bias in DTCA, as these have now been widely refuted.[55-57] Rather simplistically, many articles about nurses and DTCA have announced that nurses must be "cognizant" or "aware"—by knowing the scope of the problem, and by working "with" the industry, nurses will supposedly be able to avoid complicity in unethical promotion.[21,22,26,36,47]

This optimistic approach belies the fact that many nurses are not trained in critical appraisal, and appear to understand little of the mechanisms by which marketing strategies operate. Numerous studies have found that physicians, regardless of seniority, tend to have poor understanding of marketing, and of their own vulnerability, decision-making processes, and conflicts of interest.[58-60] Nurses are less well-studied in this regard, but are likely to have similar difficulties, exacerbated by their relatively meagre training in pharmacology, statistical inference, and critical appraisal.

Nursing's relationship to medicine may provide some insight to the minimal critical outcry in the nursing literature regarding pharmaceutical marketing. Direct-to-consumer advertising and the ubiquity of PSRs allow both patients and nurses to circumvent the physician as source of authoritative knowledge. Information access, however biased, has thus become a source of independence for nurses and patients alike.

The importance of improving nurse-physician relationships may underlie the prevalent belief among nurses that contact with the pharmaceutical industry is beneficial, opening channels of communication and providing information that enables them to interact with physicians on a more even footing. It seems likely that the ability to seek information from non-medical sources may be perceived by some nurses as a way to escape traditional medical dominance. Redress of power imbalance as a justification for DTCA is captured in the commentary of patient advocate Charles Inlander who, in 1991 opined in *Nursing Economic$* that DTCA is a tool by which patients could circumvent medical paternalism.[23] Disdain towards medical dominance is also apparent in NP publications whose authors seem to be indignant that physicians get "courted" by the pharmaceutical industry, while NPs are ignored.[38,40]

Both the physician-patient and the physician-nurse relationship have evolved in recent years. Ethicists Emanuel and Emanuel have pointed out that the physician-patient interaction has historically been paternalistic, where the physician--with superior education and knowledge of human biology--was better positioned than patients to determine their best interest.[61] However both nurses and patients now have greater access to information outside the clinical encounter, notably including DTCA, PSRs, and the internet, accelerating changes to these relationships.

However, transferring the power imbalance from paternalistic to commercial is hardly the last word in liberation. It purports to transfer autonomy, yet presents information designed to sell, rather than to enable rational treatment choices.

We propose a three-pronged approach including education, clinical policy, and research to aid nurses with the challenges of pharmaceutical promotion.

Firstly, nurses require training to understand and manage the impact of commercial activity, ideally well before post-graduate training.[34] Nurses already in the work force should receive continuing education on the range of interests promoted in health care, including those motivated by profit.

Little in their training provides nurses with adequate understanding of relevant fields including pharmacology, epidemiology, public health, evidence-based medicine, critical appraisal, psychology, social science, management, and communications studies, to the extent that they can reliably understand and manage commercial promotion.[62] Educational institutions and licensing authorities should ensure that their students or registrants receive training on the influences of commercialism and have unbiased resources to support prescribing and clinical decisions. Nurses will hopefully come to appreciate the vulnerability they share with physicians to the charms of the PSR.

Secondly, institutional guidelines, policy and quality assurance should be developed to complement such education. The exclusion of commercial sponsorship from nursing education would leave a gap; careful consideration should be made about how this may be filled with information based on best practice, and transparent with respect to its inherent biases.

Policy makers and managers in health care must identify and prevent the intrusion of external interests in clinical decisions. The Stanford University initiative to ban PSRs from its hospitals is an interesting case in point. Whilst on the one hand, it makes bold steps towards curtailing the presence of the pharmaceutical industry in its facilities, on the other, it makes no specific reference to nurses.[63] Such policies should carefully consider the issues of sponsorship and gifts in reference to nurses as well as physicians.

The final prong in our strategy is to gain a better understanding

of nurses' role in and influence on prescribing. In the United Kingdom, for example, a drive to nurse prescribing is part of the professionalization of nursing, and is seen to enhance nursing's status, patient care, and the use of health care resources.[64] This prescribing practice places nurses in an analogous position vis-à-vis the pharmaceutical industry as their medical colleagues.

But it is not just prescribing nurses who must be the focus of these strategies. As we have described above, non-subscribing nurses play an under-appreciated role in prescription and administration choices. One of us (AJ), an experienced staff nurse, recalls guiding new house staff in the choice of treatment; the other (DM) was grateful for such guidance as a medical intern.

Research is required into the mechanisms by which nurses influence medical prescribing, and the frequency of such influence in various settings. There are a myriad of likely ways, from nurse-led clinics where the decision to refer is in the nurse's hands, to drug cabinet stocking, treatment monitoring and assessment, and protocol development. Nurses must identify and acknowledge these roles, and the enormous responsibility they confer, to avoid being a soft target for commercial promotion.

Conclusion

The pharmaceutical industry recognises nursing influence on medical prescribing and identifies nurses as a marketing target. The industry has had its eye on nurses and nurse practitioners for over a decade,[65] and is heavily invested in wooing them.[66] Unfortunately, its success in this area has been at the expense of the health budget, evidence-based care, and nursing integrity. All three can and must be reclaimed.

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This article was previously published under the terms of the creative commons license in PLoS Med 5(2): e5. doi:10.1371/journal.pmed.0050005

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