In Review

Placebos in Clinical Practice: Comparing Attitudes, Beliefs, and Patterns of Use Between Academic Psychiatrists and Nonpsychiatrists

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Controversial and ethically tenuous, the use of placebos is central to medicine but even more pivotal to psychosocial therapies. Scholars, researchers, and practitioners largely disagree about the conceptualization of placebos. While different professionals often confound the meanings of placebo effects with placebo responses, physicians continue to prescribe placebos as part of clinical practice. Our study aims to review attitudes and beliefs concerning placebos outside of clinical research. Herein we compare patterns of placebo use reported by academic psychiatrists with those reported by physicians from different specialties across Canadian medical schools. Using a web-based tool, we circulated an online survey to all 17 Canadian medical schools, with a special emphasis on psychiatry departments therein and in university-affiliated teaching hospitals. A variation on earlier efforts, our 5-minute, 21-question survey was anonymous. Among the 606 respondents who completed our online survey, 257 were psychiatrists. Our analysis revealed that psychiatrists prescribed significantly more subtherapeutic doses of medication than physicians in other specialties, although about 20% of both psychiatrists and nonpsychiatrists prescribed placebos regularly as part of routine clinical practice. However, compared with 6% of nonpsychiatrists, only 2% of psychiatrists deemed placebos of no clinical benefit. In addition, more than 60% of psychiatrists either agreed or strongly agreed that placebos had therapeutic effects relative to fewer than 45% of other practitioners. Findings from this pan-Canadian survey suggest that, compared with other physicians, psychiatrists seem to better value the influence placebos wield on the mind and body and maintain more favourable beliefs and attitudes toward placebo phenomena.

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Highlights

- Most physicians acquiesce to the effects of placebos, yet they seem equivocal regarding a common placebo description.
- Probably because they construe them as therapeutic, psychiatrists seem to administer significantly more subtherapeutic doses of medication, compared with nonpsychiatrists.
- Our findings likely represent a valuable contribution to preliminary investigations of placebo use among physicians and their beliefs about placebo mechanisms and effectiveness.

Key Words: *placebos, clinical practice, Canadian physicians, academic psychiatry, online surveys*

Congruent with the working definition assumed in the high-powered world of pharmacology, most physicians construe placebos as the nonspecific effects of medical treatment that, in clinical trials, must be controlled for to assess the specific effects of new (drug) interventions.[1] Placebolike treatments, accordingly, refer to any short-term or illusory impression of improved health that some patients experience when they receive what appears to be effective treatment but actually is not for the condition being treated. As such, the placebo effect is a powerful mind–body phenomenon with a specific underlying biology that health professionals should investigate and exploit.[2]

Exemplifying the link between psychosocial factors and physiological processes, placebos are central to medicine[3] but even more pivotal to psychiatry.[4] Further, placebos bind behavioural science to the techniques of neuroscience.[5–8] Several scholars grant placebos a prominent place in clinical psychiatry[4,9,10] and mounting evidence suggests a large placebo component even in drugs forming the backbone of biological psychiatry.[11–17] However, together with most physicians, most modern psychiatrists find the science of placebos difficult to swallow.[18]

Shrouded in a checkered history, placebo use in a therapeutic context remains controversial. Indeed, in 2006 the AMA cautioned that "[p]hysicians may use [a] placebo for diagnosis or treatment only if the patient is informed of and agrees to its use."[19, p 254] The AMA admonition followed a controversial meta-analysis of clinical trials suggesting that placebo effects are either minimal or nonexistent and that "outside the setting of clinical trials, there is no justification for the use of placebos."[20, p 1594] Multiple researchers have critiqued many aspects of this controversial meta-analysis,[21–24] and reanalysis of the data yielded findings of a robust placebo effect[25] resulting in a flurry of rebuttals and debates.[26–28] However, the charged AMA statement still colours the views of many clinicians.[29] Despite subsequent discussions of this issue in bioethical circles,[30,31] the AMA tenor still guides many of the assumptions that the medical community maintains about placebos.[18] The Canadian Medical Association is yet to draft a formal policy regarding the use of placebos in clinical practice.

The placebo flame has been recently rekindled with reports of placebos being dispensed as part of routine care.[32] Publications concerning placebos now span research studies,[12] reviews,[33,34] books,[8,35] and popular media coverage,[36,37] including legal scholarship[29] and social science.[38–41] The widespread use of placebos in clinical practice has been demonstrated in a recent survey of internists and rheumatologists in the United States[42] revealing that of the 679 physicians who replied, more than one-half said they prescribed placebo treatments every now and then, and that they deemed the practice ethical. About 40% of respondents reported they used painkillers or vitamins as placebos and 13% acknowledged using antibiotics and sedatives for this purpose; barely 3% said that they used sugar pills. Over two-thirds, however, reported that rather than calling them placebos they described the pills to patients as "a potentially beneficial medicine or treatment not typically used for their condition."[42, p 1097] Five percent of physicians reported telling their patients that they were receiving a placebo and 62% believed that prescribing placebos was an ethically acceptable practice.

Numerous similar studies have been conducted in select geographic locations outside of Canada.[43–49] For example, a Danish study reported that 86% of general practitioners have used placebos at least once, with 48% using placebos more than 10 times in the previous year.[47] A separate study from Israel found that 60% of respondents prescribed placebos.[48] Among those, 62% reported that they prescribed placebos as often as once a month. Another US study targeting academic physicians in the Chicago area reported that placebos were being used in everyday clinical practice.[49] Forty-five percent of physicians reported that they had used placebos and 96% of physicians believed that placebos had a therapeutic effect. The sparse data from physicians practicing in Canada motivated us to probe the role of placebos in clinical care. Here we show results from an online survey comparing academic psychiatrists to other academic physicians across Canada. Because placebo responses and effects often occur more readily when the endpoint of treatment is a change in behaviour,[50] we expected psychiatrists to differ from other physicians. Compared with nonpsychiatrists, therefore, we hypothesized that psychiatrists would display better placebo knowledge, different beliefs, more tolerant attitudes, and heightened patterns of use. In addition, we expected sex-based differences between male and female physicians. We envisaged that female psychiatrists would have a tendency to be more compassionate toward, and more innovative about, treating their patients than would male psychiatrists. Accordingly, we hypothesized that male psychiatrists, relative to female psychiatrists, would be less likely to integrate placebos into their medical practice.

Abbreviations

AD	antidepressant
AMA	American Medical Association

Method

Using the open source LimeSurvey web-based application tool, we designed our survey to collect self-report information concerning placebos in clinical practice. Our 5-minute survey implemented numerous computerized checks to preclude invalid data, and ensured expediency as well as data anonymity. Following 7 demographic questions, 14 placebo questions covered topics such as strength of placebo effects and their use outside clinical trials. Most questions followed a multiple-choice (closed) format with the option of providing brief text responses (open format).

A few questions featured a 5-point Likert scale. Participation was voluntary and we offered no monetary compensation to respondents. An adaptation from earlier questionnaires,[47–49] the current survey remains available online.[51,52]

Procedure

We circulated our survey to academic physicians by contacting all medical schools across Canada. We broached our bilingual research project with each of the 17 deans of medicine and asked that they consider distributing our survey to academic physicians under their administrative auspices. With 3 deans abstaining (Université de Montréal, Université Laval, and Université de Sherbrooke) for unspecified reasons, we estimate that our survey reached about 7600 academic physicians from the remaining 14 schools. In a separate effort to target psychiatrists, we similarly contacted the chairs of all psychiatry departments across Canada and everyone responded favourably.

Medical schools and psychiatry departments that did not reply to our initial email received follow-up telephone calls. Emails to the deans and chairs provided English–French information regarding the nature and relevance of the study, as well as the institutional ethics approval. We requested that the deans encourage all physicians to complete the web-based survey. For the chairs of psychiatry, the email also outlined the importance of placebos in psychiatry and the value of receiving feedback from practising academic psychiatrists.

A brief email, crafted for the physicians, described the research study and provided live links to the survey in both French and English. We informed participants that the survey was completely anonymous. In accordance with certain provincial constraints (for example, section 30.1 of the British Columbia Freedom of Information and Protection of Privacy Act), we stored and accessed all survey information in Canada. Based in Montreal, McGill University's Information Technologies Services provided support and maintenance of the online survey and ascertained data confidentiality through the Educational Technologies team.

Statistical Analysis

We analyzed the data using descriptive statistics and frequency distributions using SAS statistical software, Version 9.2 (Statistical Analysis Systems, SAS Institute Inc, Cary, NC), including chi-square and Fisher exact tests.

Results

General

Respondents comprised 606 academic physicians, 257 (42.41%) of whom were psychiatrists. Male and female respondents represented 65% and 35% of the sample, respectively. Age ranged from 24 to 88 years (median = 52 years; mean = 51.1 years).

Definitional Discrepancies

Table 1 shows statistically significant differences between psychiatrists and other physicians concerning characterizations of placebo.

Administration in Clinical Practice

About 20% of physicians—be they psychiatrists or nonpsychiatrists—reported that they had either prescribed or administered a placebo in the course of routine clinical practice. Only 2% of psychiatrists reported that placebos had no clinical benefit, compared with 6% of other physicians ($\chi^2 = 4.72$, $df = 1$, $P = 0.03$). Forty-three percent of psychiatrists indicated that the use of placebos might be permitted after notifying patients that they are receiving a placebo whereas 28% of nonpsychiatrists concurred ($\chi^2 = 14.36$, $df = 1$, $P < 0.001$).

Figure 1 compares how psychiatrists and other physicians indicated their use of unwarranted treatments. For example, 38% of psychiatrists reported giving subtherapeutic doses of medication to their patients, compared with 6% of nonpsychiatrists ($\chi^2 = 97.36$, $df = 1$, $P < 0.001$). In addition, 16% of psychiatrists, relative to 9% of the remaining sample, have prescribed prefabricated placebo tablets ($\chi^2 = 6.39$, $df = 1$, $P = 0.01$). Table 2 outlines what physicians contemplating a hypothetical situation involving placebo administration would say to their patients.

Strength of Placebo Effects

Psychiatrists, compared with nonpsychiatrists, were more likely to rate placebos as having powerful therapeutic effects on children (31% to 16%, respectively), undereducated patients (25% to 15%), suggestible patients (70% to 60%), and patients from non-Western cultural backgrounds (9% to 3%). Unlike group differences for children ($\chi^2 = 17.65$, $df = 1$, $P < 0.001$), suggestible patients ($\chi^2 = 5.78$, $df = 1$, $P = 0.02$) and non-Western patients ($\chi^2 = 12.36$, $df = 1$, $P < 0.001$), differences in ratings for undereducated patients ($\chi^2 = 9.64$, $df = 1$, $P = 0.002$) were due to response variation between 27% of male psychiatrists and 13% of other male practitioners ($\chi^2 = 11.95$, $df = 1$, $P < 0.001$).

About 18% of female physicians rated placebos as having powerful therapeutic effects on women; however, discrepancies in agreement existed between 26% of male psychiatrists and 17% of male nonpsychiatrists ($\chi^2 = 4.40$, $df = 1$, $P = 0.04$).

Different levels of agreement arose between psychiatrists and nonpsychiatrists when responding to the statement "the placebo effect is real" and "placebos have therapeutic effects." Specifically, among psychiatrists, over 77% agreed or strongly agreed that "the placebo effect is real" as compared with less than 68% of other physicians ($\chi^2 = 6.86$, $df = 1$, $P = 0.009$). Figure 2 displays the response distribution to the assertion "placebos have therapeutic effects."

Table 1 Typologies of placebo definitions

Item 8: The following statement(s) best describe(s) my definition of a placebo

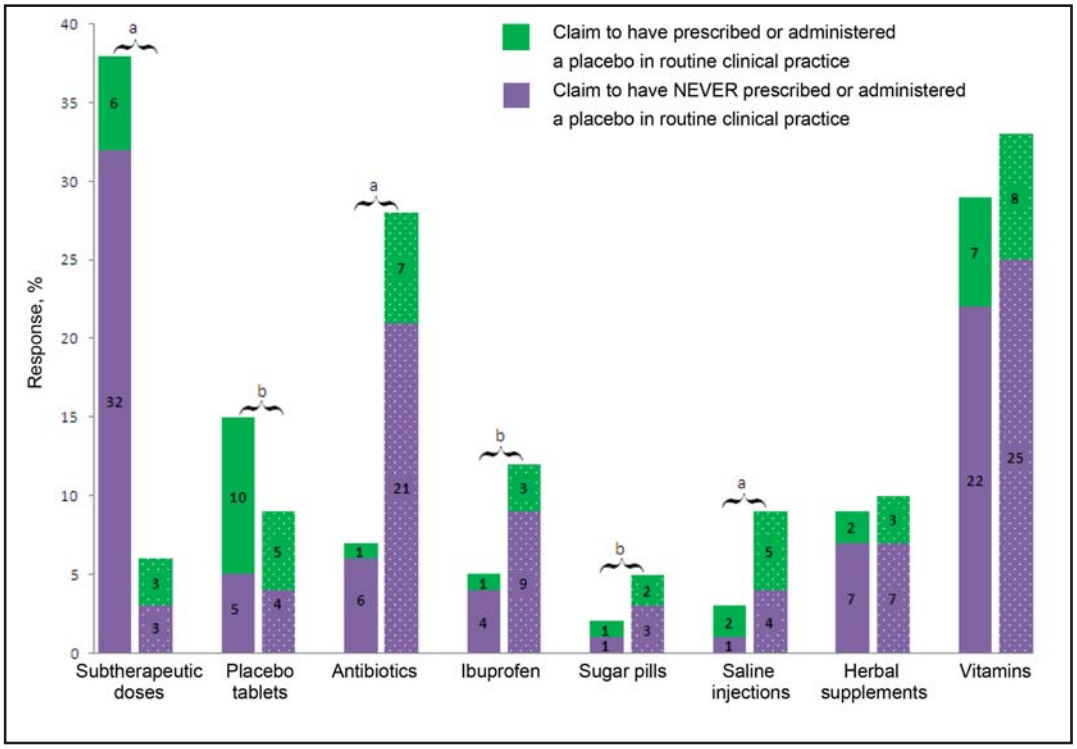
Definition	Psychiatrists %	Other physicians %	Result χ^2 (*df*) *P*
a. An intervention that is not expected to have an effect through a known physiological mechanism	46.3	55.3	4.80 (1) 0.03
	♀ 48.9	♀ 58.9	♀ 2.08 (1) 0.15
	♂ 45.0	♂ 53.3	♂ 2.70 (1) 0.10
b. An intervention not considered to have any specific effect on the condition treated, but with a possible unspecific effect	52.9	37.3	14.76 (1) <0.001
	♀ 47.7	♀ 39.5	♀ 1.42 (1) 0.23
	♂ 55.6	♂ 36.0	♂ 15.05 (1) <0.001
c. An intervention that is inert or innocuous	19.5	32.1	12.07 (1) <0.001
	♀ 22.7	♀ 29.0	♀ 1.03 (1) 0.30
	♂ 17.8	♂ 33.8	♂ 12.60 (1) <0.001
d. Other (alternative definition)	6.7	2.6	5.87 (1) 0.02
	♀ 3.4	♀ 2.4	♀ 0.18 (1) 0.67
	♂ 8.3	♂ 2.7	♂ 6.32 (1) 0.01

Differences regarding options b, c, and d were due to response variation between male psychiatrists and male nonpsychiatrists.

Percentages may not add up to 100% because each physician could select multiple options.

♀ = female; ♂ = male

Figure 1 Responses to Item 9: "I have prescribed or given the following form(s) of treatment in situations without demonstrated or expected clinical efficacy." Although about 48% of both psychiatrists and nonpsychiatrists reported that they "would never give a placebo outside of a clinical research trial," a comparable percentage of physicians from both groups prescribed at least 1 (76%), 2 (25%), or 3 (11%) different unwarranted treatments. (Data from nonpsychiatrists are in dotted columns.)



[a] $P < 0.001$; [b] $P < 0.05$

Table 2 Answers to Item 11

If I were to prescribe a placebo, I would tell the patient that:	Psychiatrists %	Other physicians %	Result χ^2 (*df*) *P*
It is a medication	5.1	4.9	0.01 (1) 0.92
It is a placebo	17.5	10.3	6.62 (1) 0.01
It is medicine with no specific effect	7.0	4.6	1.64 (1) 0.20
It is a substance that may help and will not harm	31.1	35.5	1.28 (1) 0.26
I say nothing	2.3	1.4	*P* = 0.54[a]
I would never give a placebo (outside of a clinical research trial)	47.1	47.6	0.01 (1) 0.91
Other	8.2	4.0	4.71 (1) 0.03

[a] Fisher exact test

Figure 2 Percent rating of agreement from psychiatrists (inner circle) and other physicians (outer circle) to Item 13: "I believe placebos have therapeutic effects." Answers ranged from 1 (strongly disagree) to 5 (strongly agree). Between the 2 groups, χ^2 = 22.74, *df* = 4, *P* < 0.001.

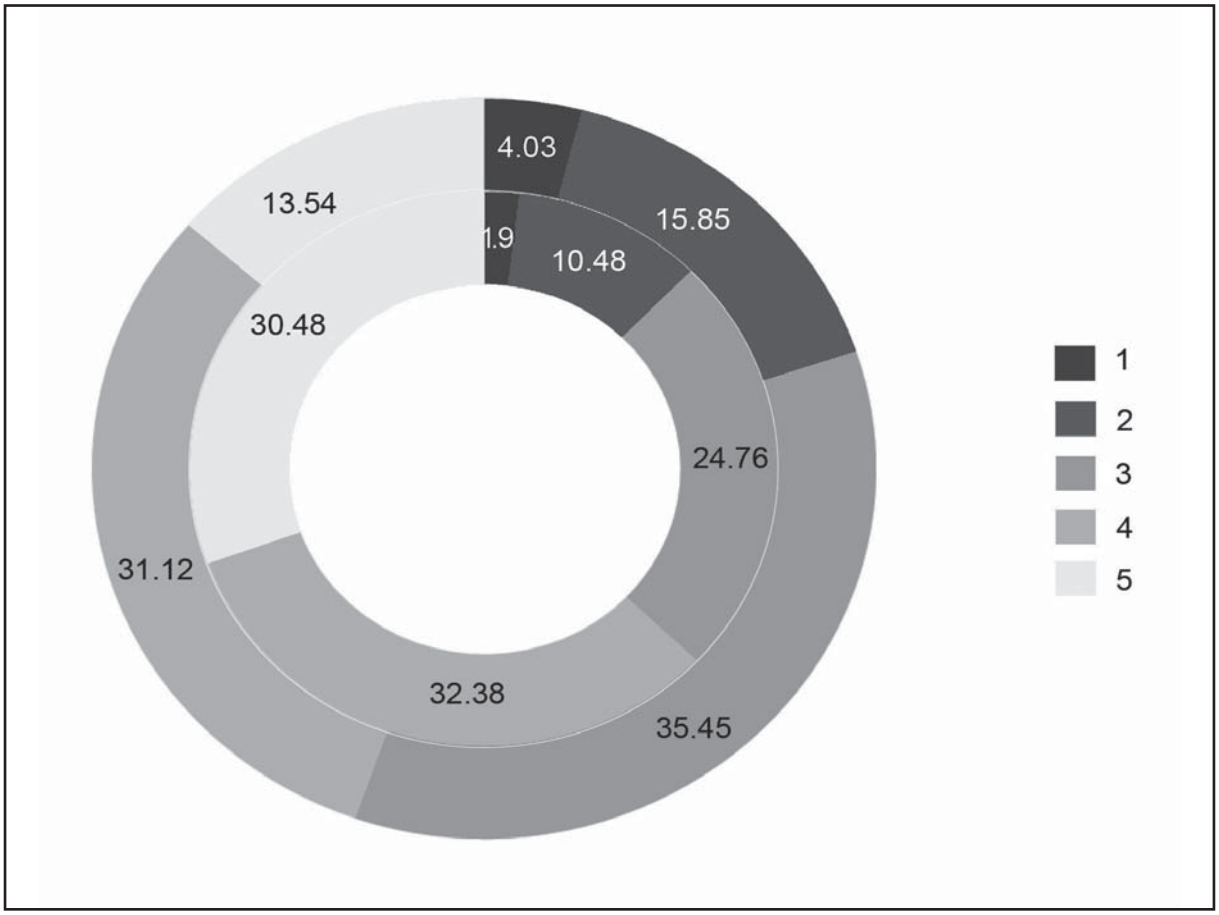


Table 3 Answers to Item 20 and Item 21

20. What benefits can placebo treatments have for the following health problems?									
	Psychiatrists %				Psychiatrists, compared with nonpsychiatrists	Other physicians %			
Health problem	PSYC only	PHYS only	Both	Neither	χ^2 (*df*) *P*	PSYC only	PHYS only	Both	Neither
Mental disorders	18.9	0.4	75.4	5.3	*P* < 0.001[a]	36.0	0.7	53.9	9.5
Neurological disorders	22.3	3.4	62.6	11.7	28.23 (3) 0.001	30.3	2.1	40.9	26.8
Cancer	28.4	1.9	54.8	14.9	*P* < 0.001[a]	39.3	0.7	32.1	27.9
Recovery from addiction	20.0	1.0	67.6	11.4	*P* < 0.001[a]	28.9	1.1	52.8	17.3
Pain	13.9	1.8	82.1	2.2	*P* < 0.001[a]	24.6	1.3	63.4	10.7
Immune problems and (or) allergies	17.3	4.1	65.0	13.7	46.06 (3) 0.001	23.1	2.1	37.0	37.7
Viral infections	26.5	2.6	43.9	27.0	22.20 (3) 0.001	31.2	1.4	24.8	42.6
Gastrointestinal disorders	18.4	1.9	72.0	7.7	*P* < 0.001[a]	30.3	1.1	48.9	19.7
Cardiovascular disorders	22.9	1.6	62.0	13.5	*P* < 0.001[a]	27.5	0.7	35.7	36.1
Sleep disorders	17.5	1.4	76.8	4.3	*P* < 0.001[a]	29.6	0.7	58.5	11.2
Sexual dysfunction	19.7	1.9	70.2	8.2	*P* < 0.001[a]	30.9	0.7	53.3	15.1
21. What types of benefits do you think these categories can have?									
Meditation, yoga, or relaxation techniques	14.4	0.4	82.1	3.1	*P* = 0.002[a]	9.1	0.6	89.7	0.6
Hypnosis	16.7	0.0	83.3	0.0	*P* < 0.001[a]	23.7	1.3	65.3	9.7
Social support system	8.0	0.0	92.0	0.0	*P* = 0.004[a]	26.4	0.6	72.2	0.9
Good emotional health	35.3	0.9	55.1	8.7	*P* = 0.05[a]	13.6	0.3	85.5	0.6
Interior design of health care environment	20.8	0.4	76.2	2.6	*P* < 0.001[a]	43.9	1.3	37.2	17.6
Prayer or spirituality	21.9	0.0	77.7	0.4	*P* = 0.008[a]	31.6	0.6	63.2	4.6
Expectation or belief	17.8	0.4	81.3	0.4	*P* < 0.001[a]	33.4	1.2	62.6	2.7
Doctor–patient rapport	14.0	0.9	79.3	5.4	*P* < 0.001[a]	32.7	1.2	64.9	1.2
Complementary and alternative medicine	6.8	4.6	86.8	1.8	*P* = 0.01[a]	23.8	1.3	67.0	7.9
Biofeedback	2.5	0.8	96.7	0.0	15.98 (3) 0.001	14.5	3.2	75.6	6.8

[a] Fisher exact test

Both = both psychological and physicological effects; Neither = neither psychological nor physicological effects; PHYS = physiological effects; PSYC = psychological effects

Disparities among psychiatrists and other physicians occurred when considering the effect of medication colour (χ^2 = 20.60, *df* = 4, *P* < 0.001), personality and bedside manner of the physician (χ^2 = 10.34, *df* = 4, *P* = 0.04), and the clinician's belief in treatment effectiveness (χ^2 = 19.60, *df* = 4, *P* < 0.001). Distributions weighed more toward psychiatrists believing that these factors influenced a patient's response to medication. However, some of these differences between psychiatrists and nonpsychiatrists existed owing to differences between male and female practitioners; for example, medication colour and physician beside manner (χ^2 = 17.93, *df* = 4, *P* = 0.001, and χ^2 = 13.16, *df* = 4, *P* = 0.01, respectively).

About 90% of physicians reported that psychological factors played a role in explaining how patients may benefit from a placebo. In contrast, more psychiatrists (47%), compared with the rest of the sample (25%), accounted for biological factors (χ^2 = 33.14, *df* = 1, *P* < 0.001). About 70% of females reported that the mind–body connection was at play; however, a difference exists between the 67% of male psychiatrists and 56% of male nonpsychiatrists that agreed (χ^2 = 4.77, *df* = 1, *P* = 0.03).

Health Benefits of Placebos and Other Alternative Methods

A difference emerged between psychiatrists and other physicians when asked about the benefits placebos may have in various health problems, as displayed in Table 3, Item 20. In addition, Item 21 shows the types of benefits various alternative methods may have, according to psychiatrists and nonpsychiatrists.

Discussion

Compared with other medical specialties, psychiatrists appear more complaisant in their attitudes and beliefs toward placebos. Although about 20% of psychiatrists—comparable to other physicians—responded affirmatively to the question "Have you ever prescribed a placebo in the course of routine clinical practice?", psychiatrists reported using subtherapeutic doses of medication significantly more than nonpsychiatrists (Figure 1). This spike in the administration of subtherapeutic drugs was prevalent irrespective of the sex and age of the psychiatrist.

Fewer psychiatrists (2%), compared with nonpsychiatrists (6%), reported that placebos had no clinical benefit. This finding suggests that psychiatrists may better appreciate the clinical merits of using placebos in routine care. Moreover, our findings suggest that physicians may only partially heed the AMA admonition.[20] About 90% of respondents agreed that psychological factors play a role in explaining placebo benefits. However, more psychiatrists (47%) than nonpsychiatrists (25%) reported that biological factors explain how placebos may benefit patients. This attitude extends to other categories (Table 3). For example, over 95% of psychiatrists report believing that relaxation techniques have both psychological and physiological benefits. Further, findings indicate that psychiatrists appreciate the effects placebos can engender in a range of disorders (Table 2). Because of their continuous exposure to the effects of a disrupted mind on health, psychiatrists may better appreciate the therapeutic effects of placebos.

Figure 1 shows that 2 variations on the placebo theme seem palatable as treatment options in situations without expected clinical efficacy. One variation refers to pseudoplacebos—placebolike interventions that may be active in principle but unlikely effective for the condition being treated—which comprise such treatments as vitamins for chronic insomnia.[53] In our study we show that the use of pseudoplacebos is rampant in clinical practice. This trend is increasingly prevalent, probably because using pseudoplacebos reduces some of the logistical and ethical problems associated with inert placebo administration. In other words, ethical concerns appear less tenuous when a physician prescribes an active substance, albeit speciously.[54,55] Figure 1 outlines how psychiatrists as well as nonpsychiatrists prescribe various pseudoplacebos, including vitamins, herbal supplements, and other treatments. This figure also demonstrates that nonpsychiatrists prescribe significantly more antibiotics, ibuprofen, and saline infusions than psychiatrists. In line with the disorders that they see and treat, psychiatrists should seldom prescribe patients with antibiotics and ibuprofen; however, they do appear to prescribe more prepared placebo pills (for example, commercially available lactose pills) relative to the other responding physicians.

A second variation has to do with the notion of a superplacebo—a treatment that is an actual placebo wherein neither the prescribing practitioner nor the receiving patient is aware of the absence of evidence to recommend it therapeutically.[56] Having gleaned the insights of multiple clinical psychiatrists, our findings suggest that at least some psychiatrists view prescribing subtherapeutic doses of psychiatric medication as clinically therapeutic.[57] For example, in the 1980s, haloperidol dosing of up to 100 mg/day was not unusual and a dose of 2 to 4 mg/day would have been considered homeopathic if not a downright placebo. However, subsequent studies have suggested even such low doses as potentially therapeutic. Thus, when administering subtherapeutic doses of medication, at least some psychiatrists may be under the impression that they are instigating an effect that may have therapeutic value.[53]

Placebo confusion appears deeply entrenched because although nearly one-half of physicians reported that they "would never give a placebo outside of a clinical research trial" (on Item 11), many more indicated that they have prescribed placebolike treatments (on Item 9). It is likely that fewer physicians explicitly report to prescribing placebos in clinical practice because such admission implies bad professional form; congruent with the AMA policy, the dominant view among medical researchers and clinicians deems placebo administration ethically problematic and most doctors feel effectively prohibited from using placebos in clinical practice.

Clinicians who purposefully prescribe unwarranted treatments run the risk both of legal and of ethical transgressions. Prescribing treatments without demonstrated clinical efficacy is tenuous; however, at least some psychiatrists appear to believe that subtherapeutic doses have therapeutic effects. Two common scenarios leading to the prescription of subtherapeutic doses include:

1. The practice of start-low-and-go-slow—psychiatrists often start patients on an ineffective dose of medication that they intend to gradually increase, but some patients display improvement at doses that remain far below a standard pharmacological threshold (for example, prescribing 25 mg of chlorpromazine while the recommended dose is 600 to 1000 mg).[58]

2. Receiving new patients that are already taking subtherapeutic doses of medication, the receiving psychiatrist continues to prescribe the same low dose because the patient appears to benefit.

Either deliberately or unwittingly, psychiatrists appear to be savvy placebo users. For example, a recent meta-analysis reported that ADs—flagship drugs of modern psychiatry—were largely comparable to placebos for most people suffering from depression; ADs were clinically superior to placebos in people with extreme depression only.[59] Although this controversial account has been the focus of heated debates, additional data have supported the notion that ADs are certainly less effective than we have been led to believe, and in many instances possibly

as effective as inert placebos.[11,59–61] Other examples span polypharmacy—using more than one drug for the same underlying condition without evidence-based research to support it—and off-label medications—using a drug for a purpose different from its intended indication or using an atypical dosage-related interpretation. These increasingly rampant methods of treatment, especially in the elderly,[62] appear to gel with recent studies reporting a dramatic surge in placebo response since the 1980s.[63]

That psychiatrists prescribe more subtherapeutic doses than other physicians is contrary to accounts suggesting that general practitioners are more likely to prescribe such doses[64–66]; however, it supports the notion that psychiatrists prescribe a broad range of doses. The term subtherapeutic has many interpretations and in our survey we left those to the discretion of the physician. Whereas some physicians may interpret subtherapeutic through the lens of drug blood levels and, as such, a function of the patient's metabolism, others construe subtherapeutic dose as any prescription that is below the recommended therapeutic level. Most physicians surely appreciate that homeopathy is incongruent with some basic principles of modern science and likely distinguish subtherapeutic dosage from homeopathic quantities. With more than 35% of responding psychiatrists prescribing what they believe to be subtherapeutic doses, however, further investigation should elucidate this lacuna. This issue becomes all the more complicated when even so-called therapeutic doses of ADs seem to resonate, at least in large part, with the appellation of placebos.[11,12,60]

Limitations and Caveats

In addressing the relative merits and drawbacks of Internet surveys we refer the reader to a recent special issue in Public Opinion Quarterly.[67,68] A few of these shortcomings include the challenge of drawing representative samples of the general population; dealing with the issue of people without Internet access; and minimizing the potential for nonresponse bias. These potential caveats weaken the generalizability of Internet surveys, especially those focused on broad and diffuse populations. Conversely, Internet surveys entail advantages, such as reduced social desirability, turning them into valuable research tools under certain conditions.[69] In this section, we provide a detailed account showing that these latter conditions apply to our study.

Unlike typical surveys of specifically named individuals requiring a response rate of at least 60%, our Internet survey targeted academic physicians without referring to specific individuals. As such, adhering to the definitions and metrics proposed by the American Association for Public Opinion Research is unsuitable.[67,68,70] In addition, response rates of online surveys using email invitations outperform other electronic media, such as mobile short messaging service, without compromising the sample composition of respondents.[71] Conversely, response rates for Internet surveys such as our study differ from mail surveys,[72–75] with characteristic values falling below 10%.[76–79] Our calculations show that the response rate in our study was about 10%. Response representativeness, however, denotes more than response rate.[80,81] The present demographic data are congruent with data drawing on more than 62 000 physicians practicing in Canada.[82] Therefore, our findings likely represent a valuable contribution to preliminary investigations of placebo use among physicians and their beliefs about placebo mechanisms and effectiveness.

The advantages of web-based surveys are multiple: they are expedient, allowing for efficient data collection and timely results; they permit casting a wide net while reducing the cost relative to the sample size[73]; and they eliminate the need for a full mailing address, thus providing respondents with a guarantee of anonymity.[83] Consequently, respondents benefit from social advantages, such as an increased willingness to answer charged (for example, socially threatening) questions[84] as well as a reduction, or elimination, of social desirability effects.[85] This feature is of special importance when addressing the ethically tenuous topic of placebos in clinical care.

The disadvantages of web-based surveys include several aspects. For example, they exclude responses from individuals without Internet access, thereby introducing coverage error.[69] Most university professors, physicians, and government officials, however, generally have Internet access, thus minimizing the coverage error.[73,86] Further, in any survey, including a web-based survey, respondents differ from the nonrespondents in demographics and attitude resulting in nonresponse error.[87] Nonetheless, research reports comparing Internet—such as the one we report in our survey—and mail survey methodology suggest that differences between responders and nonresponders are likely small.[88] In addition, this literature contains no account of response bias based on demographic characteristics. Finally, web-based surveys are susceptible to multiple survey completions by the same person (that is, ballot stuffing). We have implemented certain technological measures, such as the use of cookies and Internet service provider addresses, to avoid duplicate responses.[69]

Our survey attempts to estimate the prevalence of attitudes and behaviours in a population of physicians using a self-selected sample. Although it is theoretically possible that the physicians who chose to complete our survey were already those most likely to use placebos, in light of the abovementioned explanations, this possibility is unlikely. However, it is likely that our results represent specific trends and capture clinical undercurrents that may be of general interest.

Conclusions

With Internet access becoming ubiquitous, online surveys loom as potentially powerful tools to probe populations such as academic physicians. Web-based technology—such

as the one we used in our study—is hardly a remedy to all survey research problems. Similar to other tools in a researcher's toolkit, however, Internet surveys fit some tasks better than others. Although such methods require further refinement, using this tool appropriately paves the road to a more scientific way of practicing eHealth.[69]

Although no difference existed between the 20% of physicians reporting that they had either prescribed or administered a placebo, psychiatrists were less likely to report that placebos had no clinical benefit. Overall, psychiatrists' attitudes appear less stringent toward applying placebos in clinical practice.

Defining placebos continues to be a source of debate and confusion within the medical community.[1,3,4,18,89] This tenuous grey zone probably plays at least some role in obtaining results from more than 35% of psychiatrists, who report prescribing subtherapeutic doses without expected clinical efficacy, while considerably fewer of them report prescribing placebos. Although most scholars, by definition, would construe subtherapeutic doses as placebolike, our findings suggest that respondents entertain an inconsistent conceptualization of placebos and their effects. For example, at least some psychiatrists construe subtherapeutic doses as having therapeutic benefits—a scantily addressed issue, which merits further exploration. How can we determine whether a psychiatrist is operating under a therapeutic misconception regarding dose? This is an empirical question for experimental science to answer. While most physicians likely appreciate the clinical merits of placebos, limited guidelines and scientific knowledge, not to mention inadequate ethical considerations, impede open discussion concerning the optimal incorporation of placebos into the medical milieu.

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Résumé : Les placebos en pratique clinique : comparer les attitudes, croyances et modèles d'utilisation entre psychiatres universitaires et non-psychiatres

Controversée et fragile sur le plan éthique, l'utilisation des placebos est essentielle pour la médecine mais encore plus indispensable aux thérapies psychosociales. Les savants, les chercheurs et les praticiens divergent largement au sujet de la conceptualisation des placebos. Bien que différents professionnels confondent souvent le sens des effets placebos avec celui des réponses placebos, les médecins continuent de prescrire des placebos dans le cadre de leur pratique clinique. Notre étude vise à examiner les attitudes et croyances concernant les placebos, hors de la recherche clinique. Nous comparons ici les modèles d'utilisation des placebos rapportés par les psychiatres universitaires avec ceux déclarés par les médecins de différentes spécialités au sein des facultés de médecine du Canada. À l'aide d'un outil d'Internet, nous avons diffusé un sondage en ligne aux 17 facultés de médecine du Canada, avec un accent spécial sur les départements de psychiatrie de celles-ci et les hôpitaux d'enseignement affiliés aux universités. Notre sondage de 5 minutes en 21 questions, une variation d'initiatives précédentes, était anonyme. Parmi les 606 répondants qui ont rempli notre sondage en ligne, 257 étaient psychiatres. Notre analyse a révélé que les psychiatres prescrivaient significativement plus de doses subthérapeutiques de médicaments que les médecins d'autres spécialités, bien que 20 % tant des psychiatres que des non-psychiatres aient prescrit des placebos régulièrement dans le cadre de leur pratique clinique régulière. Comparativement à 6 % des non-psychiatres, toutefois, seulement 2 % des psychiatres estimaient que les placebos ne comportaient pas d'avantage clinique. En outre, plus de 60 % des psychiatres étaient d'accord ou fortement d'accord que les placebos avaient des effets thérapeutiques, relativement à moins que 45 % des autres médecins. Les résultats de ce sondage pancanadien suggèrent que, comparativement aux autres médecins, les psychiatres semblent mieux apprécier l'influence qu'exercent les placebos sur l'esprit et le corps, et qu'ils entretiennent des croyances et attitudes plus favorables à l'endroit du phénomène des placebos.