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Medical Conspiracy Theories and Health Behaviors in the United States

Over the past 50 years, numerous conspiracy theories have materialized around public health matters such as water fluoridation, vaccines, cell phones, and alternative medicine. What remains unclear is whether the American public supports these conspiracy theories or whether they correlate with actual health behaviors.

Methods | To determine the extent of “medical conspiracism” in the American public, a nationally representative, online-survey sample of 1351 adults was collected in August and September of 2013 by Internet market research company YouGov. The survey results were then weighted to provide a representative sample of the population and have the same degree of accuracy as in-person or telephone surveys.¹ This research was approved by the institutional review board of the University of Chicago. Respondents who took part in the survey gave their written consent.

Results | Table 1 lists the proportions of Americans who report having heard of 6 popular medical conspiracy theories (the full wording is in the table) and their levels of agreement with each. Conspiracy theories about cancer cures, vaccines, and cell phones are familiar to at least half of the sample. These theories also enjoy relatively large levels of support: 37% of the sample agreed that the Food and Drug Administration is intentionally suppressing natural cures for cancer because of drug company pressure; 20% agreed either that corporations were

preventing public health officials from releasing data linking cell phones to cancer or that physicians still want to vaccinate children even though they know such vaccines to be dangerous. Conspiracy theories about water fluoridation, genetically modified foods, and the link between the human immunodeficiency virus and the US Central Intelligence Agency were less well known: less than one-third of the sample said that they had heard of these conspiracy narratives and only 12% of respondents agreed with each. In sum, 49% of Americans agree with at least 1 medical conspiracy theory and 18% agree with 3 or more. These percentages are largely consistent with those found by surveys about political conspiracy theories.²

These conspiracist beliefs, in turn, are correlated with a variety of health behaviors. Table 2 list the proportion of respondents engaging in various health activities by the number of medical conspiracies they believe in, either none, 1 or 2 (“low conspiracists”), or 3 or more (“high conspiracists”). The survey indicates that conspiracism correlates with greater use of alternative medicine and the avoidance of traditional medicine. High conspiracists were more likely to buy farm stand or organic foods and use herbal supplements; conversely, they were less likely to use sunscreen or get influenza shots or annual checkups. For example, whereas 20% of the total sample reported using herbal supplements, 35% of high conspiracists do. And whereas 45% of the total sample reported getting annual physical examinations, only 37% of the high conspiracists do. Subsequent multivariate analysis that controls for socioeconomic status, paranoia, and general social estrangement indicates that medical conspiracism remains a robust predictor of these health behaviors.

Discussion | Although it is common to disparage adherents of conspiracy theories as a delusional fringe of paranoid cranks, our data suggest that medical conspiracy theories are widely known, broadly endorsed, and highly predictive of many common health behaviors. Rather than viewing medical conspiracism as indicative of a psychopathological condition, we can

Table 1. Americans Agreeing With Various Medical Conspiracy Theories, 2013^a

Medical Conspiracy Narrative	Respondents, % (N = 1351)			
	Heard Before	Agree	Neither Agree nor Disagree	Disagree
The Food and Drug Administration is deliberately preventing the public from getting natural cures for cancer and other diseases because of pressure from drug companies.	63	37	31	32
Health officials know that cell phones cause cancer but are doing nothing to stop it because large corporations won't let them.	57	20	40	40
The CIA deliberately infected large numbers of African Americans with HIV under the guise of a hepatitis inoculation program.	32	12	37	51
The global dissemination of genetically modified foods by Monsanto Inc is part of a secret program, called Agenda 21, launched by the Rockefeller and Ford foundations to shrink the world's population.	19	12	46	42
Doctors and the government still want to vaccinate children even though they know these vaccines cause autism and other psychological disorders.	69	20	36	44
Public water fluoridation is really just a secret way for chemical companies to dump the dangerous byproducts of phosphate mines into the environment.	25	12	41	46

Abbreviations: CIA, Central Intelligence Agency; HIV, human immunodeficiency virus.

^a Percentages may not total 100% because of rounding.

Table 2. Reported Health Behaviors by Medical Conspiracism

Behavior	Total	Respondents Who Regularly Engage in the Behavior, % (N = 1351)		
		No. of Medical Conspiracy Theories Agreed With		
		0	1 or 2	≥3
Take herbal supplements	20	13	22	35
Buy local/farm stand food	23	14	30	37
Prioritize organic food consumption	21	18	22	24
Take vitamins	57	54	61	58
Get annual physical examination	45	48	46	37
Get influenza shot	35	39	36	25
Visit dentist	41	44	39	33
Use sunscreen	35	38	34	30

recognize that most individuals who endorse these narratives are otherwise “normal” and that conspiracism arises from common attribution processes.² Medical conspiracism may also be a diagnostic tool for health practitioners because conspiracists are less willing to follow traditional medical advice, such as using sunscreens or vaccines, and are more likely to use alternative treatments.

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Depression and Clinical Inertia in Patients With Uncontrolled Hypertension

Depression is a known risk factor for poor prognosis among patients with cardiovascular disease.¹ Numerous biological and behavioral mechanisms have been proposed.² However, few studies have investigated the association between depression and “clinical inertia,” or lack of treatment intensification

in individuals not at evidence-based goals for care.³ To address this gap, we assessed whether a diagnosis of depression is associated with clinical inertia in patients with uncontrolled hypertension.

Methods | From February 2011 through September 2013, we enrolled a convenience sample of 28 nontrainee primary care providers (PCPs) (27 physicians and 1 nurse practitioner) and 158 patients with uncontrolled hypertension from 2 inner-city, academic hospital-based primary care clinics.

The institutional review board of Columbia University Medical Center approved the protocol. Participants provided written informed consent. Patients were eligible if they were at least 18 years old, were prescribed 1 or more blood pressure (BP) medications, and had a BP measurement of at least 140/90 mm Hg (or ≥130/80 mm Hg for patients with diabetes mellitus [DM] or with chronic kidney disease) on at least 2 consecutively scheduled visits with their PCP. Exclusion criteria were age older than 80 years and dementia. Clinical inertia was defined as a lack of medication intensification, hypertension specialist referral, or workup for identifiable hypertension despite uncontrolled BP. Depression status was based on PCP documentation in the electronic medical record.

We assessed established predictors of clinical inertia,⁴ including age, sex, systolic blood pressure (SBP) measured at the current visit, SBP at the prior visit, number of BP medications, number of medical problems addressed during the visit, DM status, and medication adherence (Morisky Medication Adherence Scale). All measures were either abstracted from the medical record by a physician or, in the case of medication adherence, by interviewing patients following the clinic visit. Multilevel analysis to account for clustering within PCP was used to determine whether depression diagnosis was associated with clinical inertia after adjusting for established predictors of clinical inertia. Sensitivity analyses were performed in which we (1) excluded 36 patients with clinician uncertainty regarding BP control status (ie, documentation of ≥ 1 BP measurement at home or at the current visit that was controlled),⁵ (2) adjusted for PCP documentation of adherence assessment, and (3) excluded patients with DM who had an SBP between 130 and 140 mm Hg. We used SAS statistical software (version 9.3; SAS Institute Inc) for all statistical analyses.

Results | The mean (SD) age of patients was 64.5 (8.8) years; 74.1% were women, 79.1% were Hispanic, 44.9% were diagnosed as having depression, and 61.2% had DM. On average, participants had a prior visit SBP of 158.7 (15.7) mm Hg, current visit SBP of 154.6 (16.7) mm Hg, were taking 2.5 (1.1) BP medications, and had 5.3 (2.3) problems addressed during the visit. Clinical inertia was more common among depressed than nondepressed patients (70% vs 51%; $P = .02$). Depression diagnosis was associated with clinical inertia in both the adjusted and unadjusted multilevel analyses (relative risk [RR], 1.40; 95% CI, 1.11-1.74; $P = .004$; adjusted relative risk [ARR], 1.49; 95% CI, 1.06-2.10; $P = .02$). The relationship remained after excluding those with at least 1 documented home or clinic



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