Garfield, the science writer: His writings on health and biomedical research

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Garfield wrote on a wide variety of topics, especially in the areas of health and biomedical research. The paper reviews over eighty of Garfield’s writings on health and biomedical research that have been published in Essays of an Information Scientist.

Introduction

Garfield’s essays on wide ranging topics published as ‘Current Comments’ in all editions of Current Contents added immense value to the weekly publication. Today, Current Contents issues may have been relegated to remote locations in libraries, but the collection of 15 volumes titled Essays of an Information Scientist, the compilation of ‘Current Comments’ that appeared in Current Contents and commentaries that appeared in The Scientist adorn many library shelves. Readers, especially the students of library and information science find in it, a goldmine of information. The essays are also available for free on Garfield's website (http://www.garfield.library.upenn.edu/essays.html).

I enrolled for an information science course about the same period when Garfield stopped writing ‘Current Comments’ in Current Contents in 1993 (continued as ‘Citation Comments’). As an information science student in the mid-90s, Garfield’s many contributions, particularly the ISI’s information products, were topics of study and I do remember having gone through a few essays to meet curricular requirements. After many years now, I got riveted to Garfield’s essays, thanks to encouragement from the Guest Editor of this special issue.

Readers of his essays know that Garfield wrote eloquently on wide ranging topics and aspects of healthcare, which included medicines, diseases, lobbying for healthcare, and hospital libraries, were subjects of many of his essays. Why did Garfield have a special interest in medical research? He answered this question himself in his 1970 essay titled, “Why medical research?” in which he talks about Alan Harrington’s book, The Immoralist that he reviewed in New Scientist. Harrington’s book seems to have had an influence on Garfield to focus on biomedical research. He said, “…even an information scientist (and publisher) does occasionally think of the social implications of his chosen profession.”

Although the essays in Current Contents began in 1962, it appears that it was in 1970 that Garfield wrote this first piece on biomedical research. Thereafter, the 1970s and 80s saw Garfield writing extensively on biomedical and health related issues.

Biomedical and healthcare research funding

Through his essays Garfield championed the cause of better funding and financing of biomedical research. He believed that lobbying could help creation of a system that would eventually lead to better healthcare. He strongly recommended that every biomedical researcher in the United States should read the book, Building a Healthy America. Conquering Disease and Disability. Facts, Figures and Funding, edited by Terry L Lierman because it had a chapter, “Lobbying for Medical Research”2. In addition to social security and health insurance funds, Garfield also wrote about the strategic role of private foundations that provided venture capital for biomedical research. Although the numbers were small, Garfield was of the view that venture capital invested by private philanthropies was vital and it was an overlooked component of the biomedical research system in the US3.

Lifestyle and man-made health issues

Garfield’s concern for health issues owing to lifestyles, including the use of chemicals and gadgets is evident in many of the essays he wrote on these...
aspects. When ionizers hit the market and proclaimed that the gadget could remove dust and bacteria from the air by creating negative ions, Garfield reviewed the research on the ionizers and negative ions and cautioned on its use unless the absence of side effects were proven. Likewise, he highlighted the diseases, particularly infections that air-conditioners can cause. He also wrote extensively on health risks posed by toxic substances in the environment that include a variety of natural and synthetic chemicals and other pollutants.

Not just the external environment, Garfield in one his essays wrote on the indoor pollution caused by methanol, asbestos, Radon 222, formaldehyde, pets, and man-made natural carcinogens. Garfield wrote a long essay on the need for labeling of packaged food owing to confusion surrounding food additives. He discussed the pros and cons of additives and provided lengthy tables on food additives, their functions and where it is used, to help readers lessen their anxiety when shopping for packaged foods. Other lifestyle issues that he addressed included overindulgence of certain foods, fasting, self-starvation and the hazards of sunbathing. His essay on vegetarianism in which he articulated about vegetarianism and its many health benefits was based on twenty five references which included Gandhiji’s Diet and Diet Reforms (1949). He also wrote about the many merits of breast feeding and discussed the factors affecting breast feeding worldwide.

**Smoking and other addictions**

Garfield, a non-smoker himself, wrote three essays on the perils of smoking. The first was more of an admonition of the smokers from the non-smokers. In the second essay, he wrote that nicotine addiction is a major health problem and confronted the lobbying group of the tobacco industry on its claim that nicotine was not addictive but merely habituating. He expressed that the tobacco industry had an obligation to help support research that would produce disease-free alternatives for future generations. The increase in smoking especially in younger women in the United States provoked Garfield to write about the same. In that essay, he took the sociological route, bringing to light, facts such as that cigarettes were ‘invented’ for women to keep them in their subordinate position of providing something for women to smoke that wasn’t a man’s pipe or man’s cigar. However, later young men took to the cigarette as their outward proof of being male and gradually became a display of machismo. He also reflects that on-screen smoking by women in films decreased over the years. Not just cigarettes, Garfield also wrote about other kinds of addictions such as caffeine and alcohol.

**Mental health**

Garfield wrote about dyslexia giving a brief overview of the condition, its origins, and relevant findings from key literature, media reports, personal communication with specialists and concluded highlighting the need for more research or enhanced funding to study the condition further and find a cure. Garfield wrote a lengthy three part essay on depression, dealing with its etiology, diagnosis and various therapy strategies used to treat depression in children and adolescents. Schizophrenia is one of the major mental diseases characterized by a loss of contact with reality. Garfield’s two part expositions on the disease include its etiology, diagnosis and treatment. Other psychiatric illnesses he wrote about included agoraphobia (fear of crowded places) and autism.

**Sexually transmitted and other diseases**

Sexually transmitted diseases because of their socially embarrassing nature are seldom discussed. Garfield chose to write about herpes simplex virus infections, particularly the herpes simplex virus 2 (HSV2), also called the genital herpes. He discussed that the disease was widespread and the sexually active adolescents and newborns were increasingly being afflicted with the disease. With no cure, Garfield suggested that the best hope for the herpes victim was the awareness of the problem. To increase awareness, ISI provided services by identifying the most recent research being conducted on the herpes virus infections. He also wrote about trichomoniasis, another widespread protozoan STD, examining the disease’s etiology and epidemiology and the controversy surrounding its diagnosis and treatment.

Garfield wrote of several other diseases and disorders including cleft lip and palate, allergies, schistosomiasis, lupus, Lyme disease, leprosy, and ulcers.

**Aging and death**

Although senility is not a disease in itself, it brings with it a host of health problems. Garfield reviewed
studies on Alzheimer’s disease and showed how serious the problem was and egged on the need to invest in basic research in this area. Reviewing a growing body of works, he illustrated the major breakthroughs in aging research and increased life expectancy owing to modern medicine. Nevertheless, he also pointed out the need for dealing with death and bereavement, as non-natural deaths have increased and death education and research will help people cope with the painful phases of life owing to death of a near and dear one.

**Preventive medicine**

Through his essays, Garfield campaigned for preventive medicine, a branch of study and practice which aims at prevention of disease. Discussing the many merits of preventive medicine over the predominant curative medicine, he wrote about the expansion of Center for Disease Control (CDC) to become a national center for preventive medicine of the United States. Another topic on preventive medicine that he wrote on was medical genetics which he thought was an important part of preventive medicine. Based on a report, Garfield states that more than 3000 diseases have a genetic component and that 150 new ones are being recognized each year. Although he agreed that genetic screening was a way to identify conditions so that it can be treated, he felt that a great deal of research must still be done on the detection, hereditary patterns, and treatment of genetic diseases, and easily administered, inexpensive tests must be developed to find them.

**Non-conventional, controversial, disputed and new topics**

Emerging and non-conventional health areas such as psychoneuromuscular problems, a rising field during the early 1980s, that studies an organism’s response to experience and the bodily system that operates to defend an organism against the disease was also a subject of one of his essays. When the *New Zealand Medical Journal* published a paper by Donald W Beaven on homoeopathy and other forms of alternative therapy discussing its dangers, Garfield reproduced the same in *Current Contents* preceded by his essay where he took a neutral stand by concluding that “the dispute between the conventional medical establishment and proponents of alternative therapy is unlikely ever to be resolved.” Likewise, he also wrote on chiropractic, which is a system of medicine that attracted controversies at that time and about clinical hypnosis, which though a serious discipline, had inaccurate popular notions and depictions.

Garfield blended research information with political issues such as in the case of fluoridation of water in the US where there were pro and anti groups on fluoridation. In his two part essay on fluoridation, he bulleted the issues in the first part and summarized the research evidence on the problem in the second. He also wrote about chlorination of water, its adverse effects and discussed other alternatives such as chloramines, bromine, iodine, carbon dioxide, UV light and irradiation, ozone, ion-exchange and so on.

A report that a number of physicians are performing surgical operations and work loads of surgical specialists are modest caught Garfield’s attention and he wrote about lack of reliable information on the quality of medical care in the US and advised readers that until such data is available they should seek second and third opinions concerning the necessity of major surgery. He also wrote a three parts essay on non-invasive medicine.

**Para-medical professionals**

With increasing medical costs, and far too few doctors during the 1970s, Garfield suggested the idea of training the para-medical professionals including nurses, midwives and pharmacists to perform medical tasks. In one of the essays, he wrote on midwifery as an alternative to the medical practice of obstetrics for the management of normal pregnancy and childbirth, emphasizing on family involvement and the avoidance of unnecessary medical intervention. Garfield also advocated support for research experiences for paramedical and medical students.

**Mundane disorders**

Garfield was of the view that many mundane disorders which were not life threatening or were not
health hazards but caused great discomfort for people suffering from them did not attract enough research attention. For example, he wrote about tinnitus, where a person hears noises of various kinds. Garfield himself who reportedly suffers from tinnitus detailed about the condition and its various types of management and also discussed the NIH’s lack of interest in tinnitus research owing to its non-life-threatening nature88,89.

Similarly, lactose intolerance is not a health hazard but is uncomfortable to some people who have problems digesting milk and milk products. Garfield dwelt on this topic explaining the problem and the need why people who have lactose intolerance and stay away from milk should consume other calcium rich food or take milk with the lactase enzyme added to it so that the enzyme deficiency can be overcome70.

Baldness, yet another problem for which people seek variety of treatments including folk remedies to hair transplants was discussed by Garfield. Having a receding hairline himself, Garfield wondered why people wanted to cure baldness. He concludes that male baldness, like common cold, is a relatively trivial problem that won’t go away and hopes that science may one day uncover a solution71.

He also wrote about snoring72, acne73 and halitosis74. Although snoring may not be a disorder in itself, Garfield dwelt on the topic and its link with a breathing disorder called sleep apnea, the cessation of breathing during sleeping75.

Information products for healthcare

Under Garfield’s stewardship, ISI launched several editions of Current Contents. He essayed about new editions of the Current Contents also in his Current Comments column. In 1972, Garfield through one such essay, he announced the launch of Current Contents/Clinical Practice (CC/CP). The new publication was aimed at improving communications and awareness in medical practice76. In January 1989, a new edition of Current Contents called CC/Health Services Administration (CC/HSA) was added that aimed at serving all those engaged in the administration and delivery of health-care services77. Yet another product that the ISI launched was the Chemical Substructure Index which was aimed at being an invaluable research resource and invaluable tool for health and environmental sciences. He also wrote about the use of social sciences information in medical libraries and mentioned about the Social Science Citation Index and how it can be of use in medical libraries.

Not just ISI’s products, but Garfield also wrote about other famous information products like Index Medicus78 and Excerpta Medica79. When Index Medicus celebrated its 100th anniversary in 1979, Garfield wrote an essay on Index Medicus. This was despite the fact that IM was a competitor to ISI’s products. Garfield states, “It’s not customary to say much about one’s competition. Many of my professional colleagues manage to write articles on one or more aspects of medical or scientific documentation without once mentioning Current Contents or Science Citation Index (SCI). ISI’s very existence disturbs their equilibrium! But I never hesitate to discuss our competition. In the case of Index Medicus, it would be intellectually dishonest. Besides, I have a sentimental attachment to Index Medicus. I am also well aware of its advantages and disadvantages when compared to other indexing systems because I played a role in its evolution.”

Medical libraries and institutions

When the Health Care Financing Administration (HCFA) of the US in 1983 proposed the removal of medical libraries in hospitals, Garfield argued in favor of the libraries highlighting the importance of the hospital library services80. Through several of his columns, he reflected from studies on how hospital library services can contribute to patient care and highlighted facts that the expenses for maintaining a hospital library is not as high as hospital administrators believed. He attempted to educate the hospital administrators on how to improve library services through use of computers and other IT tools. His writings on the importance of hospital libraries got him an invitation from Medical, Health and Welfare Libraries Group at its annual conference in 1986 to discuss the hospital library’s role in providing quality healthcare81. But this does not mean that Garfield was unquestioning all the time about information systems. When the NIH announced a request for proposal for a large scale system on International Cancer Research Information Service in 1971, Garfield expressed his skepticism wondering if the United States will squander millions on the hypothetically interesting information system.
In late 1987, the U.S. Office of Management and Budget proposed converting the National Institutes of Health (NIH) into a private research centre. The popular and scientific presses repeatedly published litanies of the NIH’s problems including the hiring freeze, noncompetitive salaries, inadequate lab space, and controversy over procurement operations. With NIH mired in problems, Garfield based on the ISI’s Science Indicators database showed that NIH had consistently improved its research performance since 1979. He stated in his essay that, “with more than twice the impact of the average paper, publications from researchers at NIH, as a group, have been and continue to be of the highest caliber. That’s the reality, not the political hype”. He cautioned about jumping to false conclusions or fixing what may need no repair in the context of his findings on NIH.

Summing up

It is more than four decades now, since Garfield wrote his first essay in Current Contents. His essays are still very relevant and most essays on healthcare issues make interesting reading. When writing about diseases, he began with the etiology and epidemiology and then presented the diagnosis and finally discussed the treatment of the particular disease. In his essays, he blended research findings from scholarly journals with information from news items and opinion pieces in the popular media, and many times also shared personal correspondence and telephonic conversations suitably on the issues he wrote about, thereby giving a holistic picture of the topic.

From his essays, it is clear that Garfield’s concern for healthcare is innate. He wrote on the physician-patient relationship questioning why can’t doctors be more human than the rest of us? In one of his essays, he says, “I might have been an excellent doctor - certainly more sympathetic than many I have encountered. However, at a time when there were at least 10 applicants for every medical school opening, a “B” in organic chemistry was considered a mortal sin.”

May be, healthcare missed having an excellent doctor. But the many contributions he has made to healthcare and biomedical research through his writings, launching specialized information products, lobbying and influencing policy and decision makers, it is evident that Garfield as an Information Scientist has contributed to the healthcare and biomedical research sector much more than what perhaps Garfield as a physician would have.

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