Abstract

Our research was conducted on a Vaccine controversy which raised the question on ethics, morality, safety and effectiveness of vaccination on children. The case study we focused on was a study done by Dr. Andrew Wakefield and twelve other colleagues, which was published in a well know journal, The Lancet. The study has recently been retracted because an investigation found that he failed to mention that his research of the MMR vaccine was funded through solicitors seeking evidence to use against vaccine manufacturers (Deer, Brian). To conclude our research we compared the current vaccination rates with the rates after the report was published in the United Kingdom. Furthermore, we also compared the number of reported cases of measles in the United States from 1997 to 2016.

Purpose

The purpose of this research is to evaluate how scientific research affects public opinion.

Background

In 1998 The Lancet, a well known journal in the United Kingdom, published findings of Dr. Andrew Wakefield and twelve colleagues. Their claim was that the measles, mumps, and rubella (MMR) vaccines were linked to the cause of Autism. The study consisted of twelve autistic children, which were routinely admitted to the Royal Free hospital in north London in 1996-1997; each child was subjected to colonooscopies, lumbar punctures, and invasive procedures. Dr. Wakefield claimed that eight parents of the twelve children blamed MMR: parents said Symptoms of autism had been lost after receiving the MMR vaccine. The case study we focused on was about a study done by Dr. Andrew Wakefield and twelve colleagues, which was published in a well known journal in the United Kingdom, published in 1998. The authors reported that the parents of eight of the 12 children associated their loss of acquired skills, including language, with the MMR vaccine (Deer; Wakefield et al. 637). Wakefield described his results in the Lancet:

“Onset of behavioural symptoms was associated, by the parents, with measles, mumps, and rubella vaccination in eight of the 12 children, with measles infection in one child, and otitis media in another. All 12 children had intestinal abnormalities, ranging from lymphoid nodular hyperplasia to aphthoid ulceration. Histology showed patchy chronic inflammation in the colon in 11 children and reactive ileal lymphoid hyperplasia in seven, but no granulomas. Behavioural disorders included autism (nine), disintegrative psychosis (one), and possible postviral or vaccinal encephalitis (two). There were no focal neurological abnormalities and MRI and EEG tests were normal. Abnormal laboratory results were significantly raised urinary methylmalonic acid compared with age-matched controls (p=0.003), low hemoglobin in four children, and a low serum IgA in four children.” (Deer; Wakefield et al. 638.

Wakefield’s published interpretation of the results of the Lancet state “We identified associated gastrointestinal disease and developmental regression in a group of previously normal children, which was generally associated in time with possible environmental triggers” (Deer; Wakefield et al.). These environmental factors can be described as pollution, a virus or a vaccine (Glazer). The focus of Wakefield’s study was directed toward the MMR vaccine so it is derived that the environmental trigger in this study would come in the form of the vaccine. Wakefield offered as part of his discussion in the article, “We did not prove an association between measles, mumps, and rubella vaccine and the syndrome described. Virological studies are underway that may help to resolve this issue.” (Wakefield et al. 641.) Immediately after the study was published, a plethora of other studies came about disputing this claim. One study followed over five hundred thousand children over an average of four years and found no connection with autism or autism spectrum disorder (Allan, Iver). Four hundred thousand of these children received the MMR vaccine and one hundred thousand did not. The ratio in autism remained the same regardless of vaccination. Since the publication of Wakefield’s study there has been a noticeable decline in vaccination in the United Kingdom (Hall 27). The immunization rate dropped from ninety three percent to seventy five percent (Hall 27). There were 56 reported cases of measles in 1998. That figure rose to 1,308 including two deaths in 2000 (Hall 27). The United States also saw numbers of vaccination flucluate (CDC). The results of Wakefield’s study gained mass media attention contributing to 25% of the population being unsure of the safety of vaccines (Luthy et al. 28). The CDC reported 64 cases of measles in 2006 despite the disease being declared eliminated by the World Health Organization (WHO) in 2000. 63 of the infected individuals reported no record of being vaccinated. 54 of the reported cases were imported. During February 2010, The Lancet retracted the research article written by Dr. Andrew Wakefield and his colleagues. Dr. Wakefield’s research article was retracted due to the fact that it was fabricated and the findings were not based on real data. The research that was published by Wakefield includes a statement admitting that they were not able to link the measles mumps and rubella vaccine to the condition in which they were researching. It was noted in another journal that Wakefield held a conference where he would announce that the MMR vaccine protects the body from the onset of autism and he recommended going to separate dose for each vaccine (Hall 27). The recent revelations of the ethical violations that Wakefield engaged in serve as a disappointing reminder to the scientific community that despite how much effort is put into gaining the public trust it can be broken with one bad article. More frequently people are choosing not to vaccinate their child for fear they will become autistic, despite the vast majority of research unable to link autism with vaccine people are still confused with misinformation. A study done in Utah shows that 25% of the residents are concerned that their child will become autistic after vaccination (Luthy et al.). The conflicting opinion in the scientific debate over vaccination isn’t the only contributing factor to the decrease in vaccinations. There are also concerns over the amount of vaccines that are being recommended to children. Parents are also under the impression that because the disease is not an eradicated disease there is no need for their child to be immunized. The public relies on trustworthy scientific research to make informed decision about their health. If the researcher fails to hold themselves to a high standard of ethics public trust is broken down which results in confusion and in extreme cases hysteria.

Conclusion

Consideration was given to both positive and negative arguments of the vaccination debate while researching the information that was available. Interestingly the research that was published by Wakefield includes a statement admitting that they were not able to link the measles mumps and rubella vaccine to the condition in which they were researching. It was noted in another journal that Wakefield held a conference where he would announce that the MMR vaccine protects the body from the onset of autism and he recommended going to separate dose for each vaccine (Hall 27). The recent revelations of the ethical violations that Wakefield engaged in serve as a disappointing reminder to the scientific community that despite how much effort is put into gaining the public trust it can be broken with one bad article. More frequently people are choosing not to vaccinate their child for fear they will become autistic, despite the vast majority of research unable to link autism with vaccine people are still confused with misinformation. A study done in Utah shows that 25% of the residents are concerned that their child will become autistic after vaccination (Luthy et al.). The conflicting opinion in the scientific debate over vaccination isn’t the only contributing factor to the decrease in vaccinations. There are also concerns over the amount of vaccines that are being recommended to children. Parents are also under the impression that because the disease is not an eradicated disease there is no need for their child to be immunized. The public relies on trustworthy scientific research to make informed decision about their health. If the researcher fails to hold themselves to a high standard of ethics public trust is broken down which results in confusion and in extreme cases hysteria.

Bibliography

- Gross, Liza. Figure 2. Publicizing a life-saving technology. Doi: 10.1371/journal.pbio.1001144g002
- Weber, Carol J. Figure 1. Autism. CDC. 2007c; 2008; National Institute of Neurological Disorders and Stroke, 2008.

Sources: CDC, 2007c; 2008; National Institute of Neurological Disorders and Stroke, 2008.