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Childhood idols, shifting from superheroes to public health heroes

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ABSTRACT

It is early Saturday morning: a day for heroes. Boggled down with various costumes, capes and action figures, young Nikoli bounds downstairs to catch reruns of *Teen Titans*. He puts his newly acquired reading skills to work, studying comic books and recreating the adventures therein. Nikoli imagines himself as the hero in his comics, defeating villains and saving victims, imitating the poses and catchphrases in the mirror. Although children like Nikoli will never gain super strength or the ability to fly, the superheroes they emulate in play are examples of people they can aspire to be. They don't even have to be fictional heroes—if we widen the scope of children's superheroes to include those that address real-life issues, or even real-life heroes who have made breakthroughs in fields such as public health, the impact could be tremendous. Imagine a world where Superman is mentioned in the same breath as Ignaz Semmelweis, the man who revolutionized sanitation in health care by demonstrating that hand washing prevents the spread of infection. Children who idolize the champions of health care could someday grow up to be heroes themselves, fighting epidemics and saving lives through education, treatment and research. Their wildest fantasies could become a reality.

Background on the popularity of superheroes

Superheroes have been a part of popular culture since the early 1930s. The first issue of *Action Comics* in 1938 featured Superman and ushered in what comic historians call the 'Golden Age of Comics' and brought comics into the mainstream.^{1,2} During World War II, the introduction of Marvel's patriotic superhero Captain America sent the popularity of comic books skyrocketing.³ More recently, superheroes have infiltrated mainstream media in the form of TV and movie franchises, further boosting the influence and popularity of these characters in a billion dollar industry. Some of these include *The Dark Knight*, *The Amazing Spiderman*, *Thor*, *Man of Steel*, *Captain America*, the television series *Marvel's Agents of S.H.I.E.L.D.* and most recently *Guardians of the Galaxy*. In 2012, *The Avengers* grossed over 1.5 billion US dollars worldwide, making it the third highest grossing film of all time.⁴ At a very young age, children idolize and emulate heroes and heroines. They consume every form of media, recreating plots through role play to become the character. The popularity of these heroes can be attributed not only to their fantastic

powers and actions, but also the flaws, virtues and origin stories that make them relatable. For example, Spiderman's alter ego Peter Parker is a nerdy teenager from Queens with a love for photography. Some may argue that these heroes are perhaps too relatable, as there have been reported cases of young children injuring themselves trying to perform stunts to become the characters they worship.⁵

Discussion

Main finding of the study

Superheroes have the power to impact the real world. Their power lies in the adventurous, ambitious hearts and minds of children, who have the capacity to grow up to be the heroes they idolize the most. They would help protect our

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world—not from otherworldly aliens or mutants, but to foster global health and battle public health disasters. Their tools are not mythical artifacts or make-believe gadgets, but vaccines or other public health items. Consider a fictional superhero who fights malaria: similar to Batman's utility belt, this character's toolbelt can include insecticide-treated nets, malaria prophylaxis, intermittent preventative treatment and indoor residual spray material. Other public health heroes can identify

signs of stroke, educate on exercise and nutrition, participate in building health infrastructure for the Ebola epidemic in western Africa and identify environmental toxins. These are not fictional abilities. There are several examples of true public health heroes whose contributions to global health are on par with superhuman feats, but that also stem from reality (Table 1). Superman may have saved Metropolis from imminent doom by Lex Luthor, but John Snow saved a town from

Table 1 Comparisons of heroes who saved humanity from imminent death and destruction

<i>Type of hero</i>	<i>Name</i>	<i>Abilities</i>	<i>Notable contributions</i>
Comic book superhero	Superman	Superhuman strength, longevity, stamina, intelligence, invulnerability, flight, freezing breath, heat vision, healing factor	Saved Metropolis from imminent death and destruction at the hands of Lex Luthor
	Batman	Detective skills, martial arts skills, indomitable will, ability to instill fear	Saved Gotham from destruction by the Joker
	Iron Man	Suit of iron which enables flight and near invulnerability, engineer	Rescued Earth from the Skrulls
	Black Widow	Martial arts and weapons, specialist, speaks multiple languages	Member of S.H.I.E.L.D. and the Avengers, fought to save the world from alien forces
	Captain America	Olympics-level athlete, vibranium-steel alloy shield, American spirit	Saved America from destruction by Adolf Hitler
	Wonder Woman	Super strength, flight, lasso of truth, indestructible bracelets, magical sword	Defeated Ares and saved the universe
	Flash	Super speed and reflexes via exposure to the speed force	Destroyed the anti-matter cannon that was set to destroy earth
	Thor	Super strength, flight with hammer	Saved Earth from destruction by Loki
	Spiderman	Super strength, agility, ability to shoot webs	Prevented numerous calamities in New York
	Incredible Hulk	Super strength, invulnerability	Defeated future self to save the world
Public health hero	Batgirl (aka Oracle)	Martial arts skills, detective skills, computer hacking, high intelligence	Served as an apprentice and ally to Batman, led the Birds of Prey crime-fighting team
	Edward Jenner	Developed smallpox vaccine	Led to eradication of smallpox
	John Snow	Removed handle from Broad street pump	Prevention of cholera
	Paul Farmer	Provided health care to the sick and poor in Haiti	Partners in health, instilling idea of health care as a basic right
	Ignaz Semmelweis	Hand washing	Showed hand washing prevents spread of infection
	Maurice Hilleman	Developed 36 vaccines	14 vaccines we still use today
	David Nalin	Developed oral rehydration therapy	Prevention of death by diarrhea
	Louis Pasteur	Rabies vaccine and pasteurization process	Prevented spoilage by food and drinks caused by microbial growth
	Virginia Apgar	Created Apgar score	Apgar test is given to every newborn to identify need for emergency medical care
	Albert Sabin	Oral polio vaccine	Led to elimination of polio in many parts of the world
	Alexander Fleming	Developed penicillin	Cure infections caused by staphylococci and streptococci, including syphilis
	Jerome Horwitz	Developed first approved treatment for HIV-AZT	AIDS is no longer a death sentence
	Luther Terry	US Surgeon General	Developed warnings against smoking
	Margaret Chan	Director-General of World Health Organization 2006–12	Improved disease surveillance, managed outbreaks of SARS and H1N1 as WHO director-general

a cholera outbreak and had a major influence in the field of epidemiology. Perhaps Superman is thankful for this contribution, because it is one less wrong for him to right, but then again Superman is not an epidemiologist. He cannot design a vaccine trial, create a sustainable and safe food source, prevent global warming or discover a drug to help prevent obesity. We propose an emphasis on public health heroes to push the envelope and improve global health worldwide (Figs 1–3).

What is already known on this topic

The idea of using superheroes to promote causes other than in public health is not novel. Marvel Comics teamed up with ‘Stomp Out Bullying’ to raise awareness against bullying and for anti-bullying strategies.⁶ We see the Incredible Hulk comforting a crying boy in a football uniform on a bench as other children are seen laughing at him in the background. Another cover shows *Guardians of the Galaxy* character Rocket Raccoon sitting at lunch with a boy that everyone else seems to reject. Recently, Drax the Destroyer, also from *Guardians of the Galaxy*, made an impression on a young boy with autism who saw the movie.⁷ The young boy was finally able to identify with a superhero who used similar communication methods

as he did and now can look up to Drax. In addition, there are a number of resources that have developed their own fictional superheroes to teach children about health and medicine.

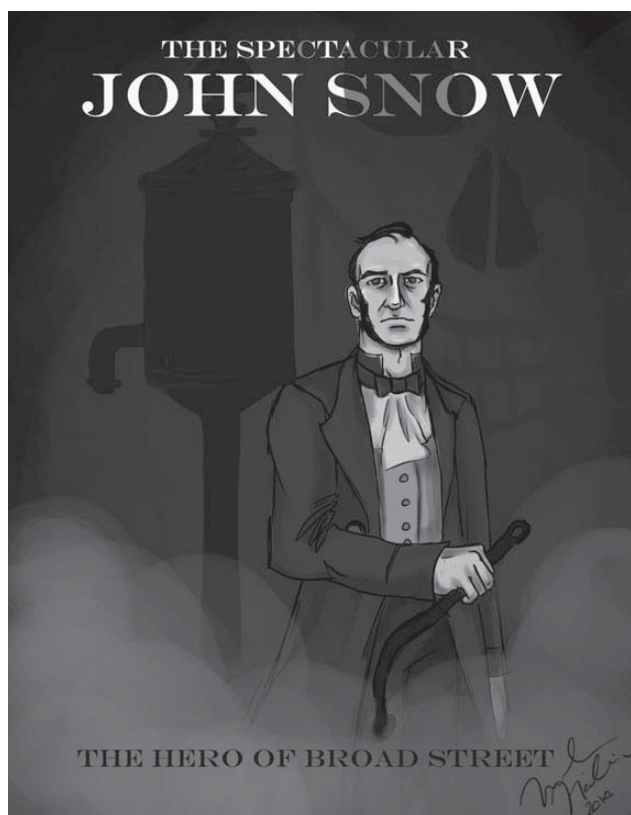


Fig. 1 The Spectacular John Snow-the hero of Broad Street.



Fig. 2 Public Health giant Ignaz Semmelweis in a superhero pose promoting hand washing.



Fig. 3 Luther Terry in a parody of the famous Lucky Strikes ad.

Medikidz is probably the most prominent of these resources.⁸ Another source, Graphic Medicine, showcases artists' work that also convey a similar message to a broader, adult audience.⁹ But these superheroes are fictional. They are not based on historic leaders in public health and medicine.

What this study adds

While there are many sources that use comic books to teach children about health, this has been limited in scope. These sources use the comic book structure and superheroes to teach children about individual health problems and treatment in an approachable manner; however, they fail to convey the message of encouraging and inspiring children to take action as future public health heroes themselves. Even the great health heroes of the past remain unacknowledged and unknown to these children. Instead of using superheroes and comic books to teach solely about the disease, if focus is directed toward public health, then it can lead to better outcomes in so many more people. If children can identify with a real-life public health hero just as they do with superheroes, they can embody the values and actions to become champions for global health and the heroes of future generations. Changing superhero plot lines to public health-related themes could improve global health. Infusing health situations with superhero mythos is one strategy of integrating health education into the lives of children in a manner that is easy to understand and retain. In order for children to idolize public health heroes, the stories of these heroes need to be properly portrayed. Interventions have used comics to reduce second-hand smoke in households, to promote healthy snacks among minority youth and teaching how to help someone during an asthma attack.^{10–12} This evidence demonstrates that pop culture and media can be an effective tool to promote health education. We even saw zombies used as a tool to teach about rabies.¹³

As we become more global, nutrition deficiencies, cardiovascular disease and stroke, new epidemics and exposure to communicable disease and environmental toxins are a major concern. Each community has its own burden of disease, and the sooner that younger members understand those burdens, the more they can do to help combat those problems. This has been done with obesity in the USA, a major problem now globally.¹⁴ In 2010, a study conducted in Ghana gauged the impact of a malaria education intervention, using children to act as 'health messengers' to educate their immediate neighborhoods about malaria and its transmission, treatment and prevention. As a result, researchers found a decreased prevalence of malaria among children in the community.¹⁵ Globally, it is important that both children and their parents become aware of the long-term benefits of public health interventions like immunization, which can have a high impact

on communities over time.^{16–18} It is also worth noting that some pathologies or health issues may be inappropriate for certain age groups and psychological and cultural backgrounds. For instance, it may be helpful for children in sub-Saharan Africa to learn the nature of how HIV can be transmitted. But younger children may not be an appropriate target population for HIV prevention education with condom use and needle exchange programs, and message delivery makes a significant difference.¹⁹

Limitations of this study

In addition to difficulties in determining which public health topics are appropriate for children to learn about, there are some limitations in the applicability of comic books themselves to our target audience. Although readers of comic books include people of all ages and genders, the industry itself currently caters mostly to its young adult male audience. While female superheroes such as Wonder Woman and Miss Marvel do exist, their numbers are few, and the objectified way they are sometimes portrayed in mainstream comics can alienate young female readers. To overcome the gender disparity in comic book readership, the initiative to teach young people through comics would need to demonstrate a fundamental change in the portrayal, roles and actions of the characters, especially female ones. Virginia Apgar and Margaret Chan may be helpful role models and heroes here.

Conclusion

Using superheroes in campaigns to teach young children about the vast world of public health from basic hygiene to emerging diseases is a method that we must take advantage of if we want to foster the global health leaders of the future. We have our own public health heroes who can serve as an example, and there is room to develop fictional heroes if needed. These public health figures serve as role models to fight diseases or promote healthy living and serve as an inspiration to improve global health for future generations. We must strive to realize the imagined world where children idolize heroes that they can become in the future.

Acknowledgements

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