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## A journey of gender in health: Transforming health by promoting gender considerations through comic art

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# **A journey of gender in health: Transforming health by promoting gender considerations through comic art**

## KEYWORDS

sex  
gender  
graphic medicine  
knowledge translation  
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LGBTQ  
post-structuralism

## ABSTRACT

*Sex and gender are determinants of health outcomes across an individual's life course. However, often in health research and practice, sex and gender considerations are either overlooked or confounded. Recent developments in health research and practice ask for the inclusion of sex and gender considerations within health research and practice. This article is a reaction to these calls. It explores the ways in which an international team of health researchers created a comic book that highlighted the impact of gender in many areas of health across an individual's life course. The creative processes are critically explored, as well as selected images. Through this work, it is proposed that comic art knowledge mobilization projects can be viewed as means to transform health research and practice by critiquing and disrupting dominant cis-heteronormative sex and gender discourses.*

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## INTRODUCTION

It is widely recognized that there are many social determinants of health, including sex and gender (Potvin and Jones 2011). The terms 'sex' and 'gender' are often used interchangeably within health research despite significant differences in the meanings of each term. 'Sex' is defined as biological attributes in humans and animals, including genetic and reproductive anatomy (Heidari et al. 2016). The words 'male' and 'female' are used to describe sex although often used mistakenly to refer to gender. However, within western societies, 'gender' is predominately viewed as an innate characteristic of people.

Over the last several decades, many theorists and critical researchers, across a variety of disciplines, have explored the social construction of gender, including Michel Foucault (1978) and Judith Butler (1990). Whilst there is increasing awareness on the multiplicity and fluidity of gender identities (Connell 1995), gender identities are still often conceptualized as binary, especially within clinical health research and practices. The language of gender is, therefore, usually limited to such words like 'man', 'woman', 'masculinity' or 'femininity' within health research. However, this is changing. For example, the Institute of Gender and Health in Canada (2020) has come to define 'gender' as socially constructed roles, behaviours, expressions and identities of people. The Institute of Gender and Health (2020) recognizes the diversity of gender and the complex way in which gender is constructed and reproduced within society. Their definition expands the traditional binary definition of gender beyond men and women and recognizes that gender is not static. Through this understanding, gender is not viewed as universal nor generalizable to all individuals. Such a definition resonates with the works of many gender theorists, including the seminal work of Butler (1990). According to Butler (1990), it is the acts, rituals or performances of gender that are done in the name of gender that create and reinforce gender within

societies. The meanings given to gender shift and change as societies and cultures shift and change (Butler 1990; Foucault 1978; Gee and Jackson 2017). Therefore, health professionals and researchers are called upon by various organizations, such as the Canadian Institute of Gender and Health to recognize the spectrum of diverse gender identities and expressions to effectively improve the health and well-being of all peoples.

As such, there is an increasing recognition of the imperative need to disentangle sex and gender within all phases of the research cycle and to examine how sex and gender can each separately and mutually influence and shape the health experiences of individuals (Tannenbaum et al. 2016; Regensteiner et al. 2019). Growing evidence shows how gender and sex affect the diagnosis, progression and treatment of disease (Mauvais-Jarvis et al. 2020). However, a misalignment still remains within researchers' preparedness to plan, conduct and disseminate health research that rigorously addresses sex and gender differences or similarities despite the increase to which regional and national health and funding agencies mandate sex and gender considerations (Regensteiner et al. 2019).

It can often be challenging to stimulate discussions among health researchers and practitioners on sex and gender considerations because of the historic neglect of sex and gender considerations in health research, as well as the often conflation of the terms (Tannenbaum et al. 2016). Health research is a broad area that includes, among others, the development of new medicines through to behavioural interventions, covering biological, social and psychological domains. These are all underpinned by the same goal to improve the care and treatment of people's health. Alternatives to traditional science and health communication methods exist. For example, comic books and comic artwork have a history of use within knowledge dissemination of health research and education on a variety of topics (Green and Myers 2010). In fact, a field called 'graphic medicine' exists and refers to the use of comics to tell personal stories of illness and health. Researchers within this field have noted that comic art can provide valuable education about the life experiences of patients and can create empathy and compassion for people with various health issues (Green and Myers 2010). Comic books can be engaging educational materials to stimulate discussions and learning for health researchers and practitioners about the importance of accounting for sex and gender over the life course. Therefore, our aim is to reveal the connections between gender and health to researchers and healthcare practitioners and how these might be communicated through graphic and visual forms. More specifically, we attempt to disrupt, destabilize and reimagine new ways of doing and practising health research and healthcare through the process of critically reflecting and analysing the creation of a comic book about gender.

## **TEAMING UP FOR AN INTERNATIONAL GENDER PROJECT**

This project, 'A Journey of Gender in Health', was originated in August 2019 at the Erasmus Summer Programme on Sex and Gender in Health and Research that brought together graduate students, researchers and health professionals from many countries. The programme was commissioned by the Dutch Ministry of Health, Welfare and Sport, and was held in the city of Rotterdam, The Netherlands. The programme was created and hosted by ZonMw, The Netherlands Organisation for Health Research and Development, as part of their Gender and Health Knowledge Programme. The weeklong programme (19–23 August 2019) consisted of several modules that examined the impacts

that sex and gender have on healthcare; for example, medical education and patient care, and various health conditions such as cardiovascular disease, mental health and overall well-being. Emerging from the modules, the Erasmus Summer Programme team, which included a variety of health researchers and representatives from various health research organizations, gave recommendations about how to address sex and gender considerations within health research. Within the programme, participants were divided randomly into teams of five to six. Each team was tasked to conceptualize ways to engage with other health researchers and health practitioners in order to facilitate discussions with them about how sex and gender considerations could be incorporated within their professional activities. Thus, the team for this project was created.

The team consisted of graduate students and postdoctoral researchers from various countries (i.e. Canada, the Netherlands and United Kingdom). The team members had expertise in various health disciplines, including medical education, developmental health psychology, child and adolescent health and well-being, mental healthcare and health services, nutrition and dietetics, linguistic and communications in health practices, the design and delivery of self-management interventions, training healthcare professionals and service evaluation. Much of the previous research of the team members involved health and gender aspects.

During the conceptualization process for the project, the newly formed team discussed many approaches that could be used to engage health researchers and health practitioners in discussions about sex and gender. One such approach discussed was an art-based approach. Research has shown that the use of comic books for health knowledge translation can be a means to create positive social and emotional benefits for patients, families and communities through meaningful and impactful communication with health professionals (McNicol 2017). The team, therefore, proposed to create a short comic book filled with meaningful artwork that illustrated the importance of sex and gender considerations within health research and healthcare practice. We decided to focus more heavily on gender, rather than sex, as the team consisted of members with expertise on gender. Each team presented their ideas to a panel of health experts from the ZonMw programme. The ZonMw reviewers agreed that art-based approach was a strategy with merit and awarded funding for the creation of a gender comic book.

## **THE JOURNEY OF CREATING THE COMIC BOOK**

The team took a post-structuralist approach in creating the book. Post-structuralism positions identities as socially constructed and provides a critical approach to explore the meanings of gender within health systems and institutions (Foucault 1978). The overall concept was to tell the story of a character with a non-binary identity named 'H' (for our common humanity), across their lifespan (from early childhood until late adulthood) and to show how gender may influence various health aspects for 'H'. The central character was non-binary to represent the spectrum of gender identities and to allow the character to be universal for people of all genders. A non-binary character also disrupted the dominant view of gender within health systems that overwhelmingly understands gender in dualistic terms.

The comic book story of 'H' included twelve key messages, which showed how sex and gender influenced various health conditions from childhood to older age, including eating disorders, depression and heart disease. These key

messages reflected the different expertise of the team, such as developmental psychology, nutrition and clinical psychology. Each team member was tasked to write two messages based upon literature within their respective areas of expertise. In writing the story of 'H', the team intentionally used the pronouns they/them for 'H' as a strategy to challenge gender binaries.

To recognize the intersection of the various social determinants of health and the voices that are often left out of health research, twelve artists of diverse gender identities, sexual orientations and ethnicities were commissioned. Each artist was asked to create one piece of artwork corresponding to a different life stage and health message. The artists were provided with a brief one-page summary of the health topic, gender considerations, age of 'H' and the team's concepts about the illustrations. However, the artists were asked to bring in their own experiences and creativity to their artwork. Each artist was also asked to illustrate 'H' in a non-binary way, but it was emphasized that they could have the freedom to illustrate the appearance of 'H' in relation to ethnicity and style. Again, this was done intentionally to symbolize how sex and gender touch the health and well-being of all people regardless of their bodies, gender, sexual orientation or ethnicities. To ensure the messages were connected through 'H' and across their life cycle, the artists were instructed to make the character recognizable by the letter 'H' on their clothing.

The artists were given approximately six weeks to complete a draft version. The team reviewed this draft and provided feedback, suggestions or approval of the concept. Very little feedback was given at this point by the team as the artists overwhelmingly captured the concepts provided to them. The artists were given several more weeks to finish and submit their final pieces to the team. After all the artwork was submitted, the team designed the book through the online software of the printing company. The illustrations were placed on one page and the corresponding written summary of the gender considerations on the opposite page. Each team member wrote two gender summaries based on literature reviews that were conducted on each topic area. The team also wrote a brief introduction for the book. The biographies of the team members and artists were provided at the end of the book. The final comic book was entitled *A Journey of Gender in Health: A Comic Book* (Cosma et al. 2020).

## **THE GENDERED JOURNEY OF 'H' AND THEIR HEALTH**

The following sections provide an analysis of selected parts of the comic book that explore the meaning of the artwork and the integrated health literature. These artworks, we assert, are critical in creating awareness and stimulating discussions on gender and health among health researchers and practitioners.

### ***Gender typing and the Dragon of Protection***

Gender typing is the process by which young children acquire values, motives and behaviours viewed as appropriate for boys and girls (Halim et al. 2013). This is largely derived from binary gender stereotypes and norms. Gender typing is influenced by parents and peers and can have multiple and different health consequences for all children (Martin et al. 2002). For example, non-conformity with, and transgression of, gender norms can be harmful to health, particularly when they trigger negative consequences and sanctions. Although the field of developmental psychology has 'long recognized the false dichotomy of gender and the importance of recognizing and respecting gender fluidity and of explaining gender along a continuum' (Dinella and



Figure 1: Olivia Rea, *The Dragon of Protection*, 2019. Digital illustration. Australia. Use of images permitted by team. Copyright © 2019 S. Goodliffe, I. Plug, A. Cosma, T. Magnée, S. Hiltner, P. Joy. All rights reserved.

Weisgram 2018: 257), research about gender typing is often framed with the binary understandings of gender. Thus, gender typing research is entrenched in discourses that are normative and anything 'other' than the binary is transgressive of gender. Gender typing also intersects with other social factors that impact health over an individual's life course, which needs to be examined when designing effective gender transformative health policies and programmes (Gupta et al. 2019; Heymann et al. 2019).

Literature within developmental psychology highlights some of the ways gender typing can happen, such as through toys, play behaviours and

clothes (Dinella and Weisgram 2018; Halim et al. 2013). This is illustrated in Figure 1. At the top of the artwork, the speech bubbles contain text that tells the children the types of activities they are not supposed to do in accordance with dominant binary gender stereotypes of western society. The speakers are invisible, representing the many different ways children learn about gender. 'H' and their friends are seen in the centre of the image, having a magical tea party in the shelter of a vibrant red dragon, called the Dragon of Protection. Around them are many types of toys, including teddy bears, trains, blocks and unicorns, that often are known or are labelled for specific genders. The Dragon of Protection whispers to 'H' and their friends, telling them it is okay for them to play as they want. The Dragon of Protection empowers the children to disrupt binary gender norms and invites them to play with the toys they enjoy rather than prescribing to the dominant gender conventions that label some toys as girl toys and other toys as boy toys.

The dragon also gives the children a place of safety to play, and this can allow them to be more creative, more authentic and healthier in their lives. In the artwork, the unicorn was specifically requested by the first author (PJ) to be included as it represents toys he often played with as a boy despite being traditionally being associated with girls. The imagery within the artwork creates knowledge about the way heteronormative and binary gender norms shape the lives and health of young children while the words of the dragon disrupts this knowledge and gives new ways for health researchers and healthcare practitioners to think about their work.

### ***Gender and eating disorders demons***

Eating disorders are generally thought of as illness for women and girls but men and boys are also at risk for developing eating disorders and due to social stigma men and boys are less likely to seek out treatment (Limbers et al. 2018). Cecilia Pace and Stefania Muzi (2019) suggested that gender-specific risk factors for binge eating disorders in adolescents should be further investigated. It is believed that the differences in treatment across genders may be due to lower awareness of eating disorders in boys and a greater reluctance in boys to seek treatment for something that is considered to be a health issue for girls (Shingleton et al. 2015).

'H' is now an adolescent. As shown in Figure 2, in the top panel of the artwork, 'H' is looking at themselves in a mirror, surrounded by various posters and magazine clips. They are comparing themselves to the models in the health fitness magazines and feeling inadequate with their own body. In the centre panels, 'H' is alone in their room, surrounded by foods like pizza that society has labelled as fattening or unhealthy. As they eat, they began to feel negative about their body. This is reflected on the shadows of the wall as their body is slowly transformed into a demon. They see their body as outside the normative and dominant ideals of thinness and feel that their body is unhealthy, gross, unappealing and disgusting to others. Louise Puhl and Catherine Heuer (2009) have noted that stigma for bodies with fat is rampant within western society and can have serious consequences on the health of people. 'H' hangs their head in frustration and shame as they judge their body. Mysterious shadow arms emerge and point their gazes towards the demonic body. 'H' is under surveillance, as if they are a prisoner in Foucault's Panopticon (Foucault 1975). As Sarah Trainer et al. (2017) suggest the surveillance of eating and body weight by oneself, and by others in society, is a





**ART BY: DAPPER DANIEL MCLAREN**

Figure 2: 'Dapper' Daniel McLaren, *Eating Demons*, 2019. Digital illustration. Canada. Use of images permitted by team. Copyright © 2019 S. Goodliffe, I. Plug, A. Cosma, T. Magnée, S. Hiltner, P. Joy. All rights reserved.

component in the construction of modern bodies. People, through the process of monitoring bodies, make judgements about what is and is not normal, healthy and acceptable for bodies. Thus, in the bottom panels of Figure 2, 'H' partakes in behaviours associated with binge eating disorders as part of their process of self-monitoring.

Through the lens of post-structuralism, the artwork is seen to represent the surveillance of bodies that all people, regardless of gender, do as part of normative western societal behaviours. Social discourses about what a healthy

and attractive body should look like create both collective and self-knowledge. It also informs the ways that people come to perceive themselves and can shape the practices of people in relation to their eating and body practices. As Foucault (1978) highlighted the connections between discourses, knowledge and power, so too does the artist of Figure 2. The artwork in Figure 2 creates discussions and reshapes discourses about the potential emotional and mental health consequences of surveillance practices. Such discourses can shift knowledges about gender and eating disorders and lead to new ways of examining eating disorder care for health researchers and healthcare practitioners.

### ***Gender and dietetic: Training for cultural safety***

In Canada, over 95 per cent of dietitians are women, and the profession is often viewed as highly entrenched in heteronormative and binary practices despite the mandate to provide care for all Canadians regardless of gender or sexuality (Joy et al. 2019). Dietetic training programmes, however, contain limited knowledge on gender and sexual diversity (Joy and Numer 2018). This lack of training may be potentially detrimental as new graduates will be unprepared to provide culturally safe care to people of diverse genders and sexualities (Joy and Numer 2018).

Figure 3 represents new ways of teaching dietetic and other health professions students. The artwork shows 'H', standing in front of a classroom, giving a lecture about gender diversity to dietetic students. 'H' talks about recognizing more than the binary genders of man and woman and tells the students that there is a rainbow of people with many genders that they will need to be prepared to serve as health professionals. 'H' explains that this increased awareness of gender diversity will help them to better address the nutritional and health needs of their clients. Research has shown that lesbian, gay, bisexual, trans and other sexually and gender diverse (LGBTQ) people have unique health and nutritional needs and often face barriers accessing healthcare due to stigma, discrimination and other social factors (Joy and Numer 2018). If students are not trained to understand the complex factors that shape the experiences and health of LGBTQ people, how can they provide competent care?

The bottom left panel of Figure 3 shows the students discussing 'H's lecture and being enthusiastic about learning about sexual and gender diversity as they recognize the need for such knowledge to be competent in their practice. In the last panel, the students and 'H' are celebrating and dancing together. 'H' feels joyous in being recognized within a healthcare curriculum that acknowledges them and gives voice to their experiences. This last panel was very important for the artist as they believed it gave the character of 'H' more depth and pride in their identity. This demonstration of pride within the artwork can help health researchers, healthcare practitioners and healthcare educators to have discussions about the importance of reimagining healthcare training systems to be more inclusive, which can, in turn, lead to the reinvention of healthcare education.

### ***Gender and general practitioners***

Diagnosis, management and treatment plans for many health issues often differ between women and men who are presenting (similar) somatic symptoms to their general practitioner (Ladwig et al. 2000; Barsky et al. 2001).



Figure 3: Jalex Noel, Teaching Gender Diversity in Dietetics, 2019. Digital illustration. Greece. Use of images permitted by team. Copyright © 2019 S. Goodliffe, I. Plug, A. Cosma, T. Magnée, S. Hiltner, P. Joy. All rights reserved.

This is often a result of implicit biases that can be defined as an association that results in negative consequences. In the case of gender, biases may limit healthcare options or result in the differences noted in diagnosis, management and treatment plans (Fitzgerald and Hurst 2017). There have been calls for the healthcare profession to address the role of biases within healthcare (Fitzgerald and Hurst 2017). Figure 4 seeks to answer to such calls and was created as a way to explore the impact of gender bias in healthcare.

The artwork (Figure 4) illustrates the presence of unconscious gender bias in general practice, by showing the two potential health trajectories for 'H'. In the top panel, the trajectory for 'H' is one as being recognized or assumed to be a man. 'H' is shown laying in a hospital bed, undergoing significant tests recommended by the general practitioner so they can diagnose 'his'

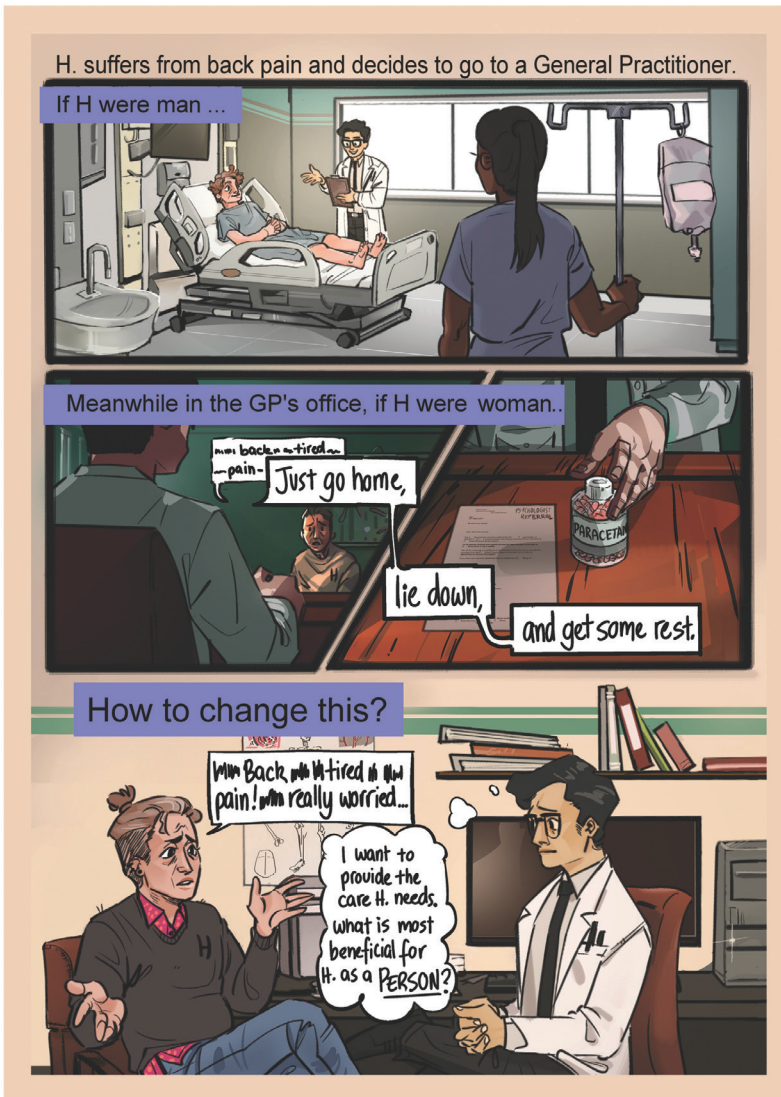


Figure 4: Corey Morgan, *General Practitioners and Gender Bias*, 2019. *Digital Illustration*. Australia. Use of images permitted by team. Copyright © 2019 S. Goodliffe, I. Plug, A. Cosma, T. Magnée, S. Hiltner, P. Joy. All rights reserved.

condition. In the middle pane, a different trajectory is shown, one in which 'H' is perceived to assume the gender identity woman. The outcome here is very different. The words 'just go home, lie down, and get some rest' float across the image as the general practitioner says the words to 'her' and results in the general practitioner simply giving 'H' a prescription. Gender biases, as noted by Fitzgerald and Hurst (2017), are on full display within the top and middle panels of Figure 4, as the perceived 'man' 'H' is given much different care (hospital admittance, diagnostic testing, further consultation) than the perceived 'woman' 'H' (prescription, discharge and no follow-up). The gender

biases of the general practitioner operate to disadvantage the ‘woman’/‘H’ who, like other groups, such as minority ethnic populations, immigrants, the poor, LGBTQ groups, the overweight and the disabled, are already rendered more vulnerable from structural inequalities in healthcare institutions (Fitzgerald and Hurst 2017).

It has been noted within health literature that once women visit their general practitioner, they are less likely to undergo physical examinations, receive less diagnostic or preventive tests and are less likely to receive referrals for specialists to undergo surgery than men (Arber et al. 2006; Borkhoff et al. 2008; McKinlay et al. 2007). General practitioners are more likely to attribute women’s symptoms to psychological causes, often leaving women’s symptoms medically unexplained (Goudsmit 1994).

In the bottom panel, a general practitioner who recognizes the influence of gender bias on treatment options is shown. The general practitioner tries to move beyond gender bias to treat ‘H’ in the best way possible. Through this artwork, health researchers, general practitioners and other healthcare professionals can learn the importance of not assuming the gender of their patients and to practise without such assumptions. Through the artwork, we call general practitioners to reflect on, and try to set aside, their gender stereotypes and biases when providing care to their patients.

### ***Gender and Dragon of Death***

It is increasingly being recognized that historically the science of heart health has mostly focused on men with clinical trials primarily recruiting men and the belief by many health practitioners that heart disease is a disease for men (Woodward 2019). However, a lot of women also experience heart disease, albeit differently than men. For example, risk factors, such as diabetes and smoking, can be different between genders (Woodward 2019). Gender bias within heart healthcare occurs often and can result in negative health consequences for many women. Recent research indicates that women are 12 per cent less likely to be screened for cardiovascular risk (Hyun et al. 2017), and yet women are less likely to survive heart attacks than men, especially when treated by physicians who are men (Greenwood et al. 2018).

In Figure 5, the comic book team attempted to address the need for more awareness of gender in heart disease. In the gloomy world depicted in the upper panel, a large beastly dragon, known as the Dragon of Death, dominates the space. The Dragon of Death is also known to the knights by their other name, acute myocardial infarction. The Dragon of Death steals the lives of others through the destruction of their hearts. The dragon’s tail, in the shape of a heart, is symbolic of a heart cut-off from the blood of life, a heart attack that kills. Women try to take cover, but the Dragon of Death towers over them. Knights try to save the women, but their instruments are useless against the thick hide of the dragon and break against it. The knights are representative of physicians who, because of a lack of heart health research that considers gender, do not possess the knowledge and experience to defeat the dragon (the myocardial infarctions) and save the women. ‘H’, in their later years, looks upon the scene with despair, frightened to suffer the wrath of the Dragon of Death.

In distinct contrast, the bottom panel, the world is brighter, the sky is blue, there is green grass and flowers dot the landscape. The battle is over, and the blood no longer is spilled on the ground. The darkness is gone, and the atmosphere is full of lightness. The world has more hope. The Dragon of Death has



Figure 5: David Mahler, *The Dragon of Death*, 2019. Digital illustration. Australia. Use of images permitted by team. Copyright © 2019 S. Goodliffe, I. Plug, A. Cosma, T. Magnée, S. Hiltner, P. Joy. All rights reserved.

been weakened and appears smaller. The Dragon of Death is more tamed and the women dance around the scene in celebration. 'H' is among them, jubilant that the dragon has been subdued by a team of knightly physicians who have disrupted and subverted the traditional gender roles of both knights and physicians that were exclusively for men. These knightly physicians are more gender diverse and, therefore, as reported in the literature (Greenwood et al. 2018), are more capable of recognizing and treating myocardial infarctions in women. The people in the image celebrate in their triumph of improved heart health and care, particularly for women but more diversity in heart specialists would benefit other groups as well. This imagery can help health researchers and healthcare practitioners to understand how gender and ethnic diversity in physicians is critical to more effectively treating heart disease.

## TRANSFORMING HEALTH RESEARCH AND PRACTICES

The use of comics is valuable in ways to educate health researchers and healthcare practitioners about the importance of sex and gender in their day-to-day work. The artwork presented in this article has combined evidence-based knowledge and creative inputs through a post-structuralist lens to inform new understandings of gender and to translate crucial health knowledge. The artwork works both on a metaphorical level and on a visual level to capture the nuances of gender and to represent the lived experience of people in a multidimensional, intersectional and cross-cultural capacity. A critical examination for each piece of the artwork presented in this article reveals how the use of comics can produce a narrative and a story that goes beyond simply translating health information, as in a health poster. The use of a non-binary character can challenge preconceptions about gender and initiate ways to re-evaluate the relation between health and gender. Therefore, collaborations between artists and researchers allow knowledge to move outside the ivory towers of academia to be more universally used. Through the collaboration process, health research can be brought to life in an exciting and powerful way. We, therefore, suggest that comics have the potential to transform health research and healthcare to be more sex and gender diverse, and recommend other health researchers use such methods to give voice to their research. We recommend further research in the area of knowledge dissemination and health education, such as qualitative evaluations and interviews with knowledge users to critically explore their thoughts on the use of comic art within health care and gender topics.

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