

In the fall, I had the opportunity to take a public health course on health disparities and each week we explored different areas where such disparities exist. One week the class looked at health literacy and health care and this article would have made a great addition to that week's discussion. We were able to discuss the concept of racism in the medical field with UVA clinicians and hear their thoughts and opinions on the matter. From the article and what I personally have knowledge on, systemic racism exists in the medical field and leads to racial disparity such as the one described in this article. The problem is that the medical professionals have been taught for years that Blacks and other races experience pain and other conditions differently than the white population. The health care professionals have learned what they know based on the white population rather than taking into account other races have different experiences. Blacks will not be given the same care as whites because their condition will be blamed on other comorbidities that they are likely to experience simply because of their race. Implicit bias has been shown to be a major issue in the medical field resulting in stereotyping and judgement. The biasing also exists in the clinical trials for drugs, devices, etc. To this day, the trials and testing focus on the white male population. I talked with female clinicians who have expressed that some devices are not as adept for them compared to a male clinician due to sizing or other problems. Progress has been made including other races and genders, but there is still biasing present resulting in lack of data and knowledge for populations outside the white male group.

Some of the key mistakes include not acknowledging that this implicit bias exists and not addressing it in school or training. Problems with biasing are known to occur in the medical field, yet, there is no uniform action addressing this problem. The other mistake is in testing and trials not requiring diverse populations to recognize the differences that may occur among genders and races. We know every individual is different and that it is impossible to understand everything that could happen to everyone. But it should be a priority to the government and all regulators that data and information for all potential users of any device, drug, equipment, etc. is available. Finally, and potentially the largest mistake, is individuals not acknowledging or taking responsibility when they do exhibit bias whether it is implicit or explicit.

The absence of bias needs to be addressed in several areas to start making an impactful difference in the medical field. First, within school and training programs the concept of bias, implicit and explicit, should be discussed. Medical professionals will invoke implicit biases because they are not even aware such a thing exists. Acknowledging the biasing exists in the medical field and explaining how to go about avoiding such stereotyping and judgements will help medical professional avoid it in the future. All medical personnel should undergo a course on biasing in hopes of minimizing what biasing already exists. Next, the FDA needs to ensure diverse trials for medical devices, equipment, drugs, etc. Not only should a variety of races be included, but genders should be considered as well. Action by the FDA could play a large role in assuring the absence of bias. However, at the end of the day, the onus ultimately lies among individuals. Each individual needs to take responsibility and action to assure the absence of bias. Stereotyping and judgements are not acceptable especially when they are present in the medical field. Different races or genders should not receive better or worse treatment because our government regulations, engineers, clinicians, etc. have not taken on the responsibility to assure the

absence of biasing. Biasing is never going to full dissipate, but actions can be taken to reduce biasing in all areas of the medical field.

In the future, I plan to move into a career in orthopedic device development. There are some disparities I should be aware of to help eliminate biasing and reduce actions of bias myself. The initial action I took to reduce personal biasing was by taking the health disparities course last semester. I wanted to make myself aware of the disparities people face and the effect they have on one's health. This allows me to be more open-minded and take into consideration some aspects of life that I personally may not experience. Since the FDA currently does not explicitly require diverse groups for testing including a range of races, I will need to consider all ethnicities when testing any future devices in the field. This includes all genders so women are equally represented. I will also need to take into account the prevalence of other comorbidities that are present in other races more than others and ensure they will not impact the device to prevent certain people from benefiting from it. In addition, I want to make sure I acknowledge that often times devices are focused on males. Devices typically are designed for a man to operate often being larger making it more difficult for women with smaller hands to handle. I want to ensure my future design work is suitable for all clinicians to use whether that means I have to design additional attachments or a second smaller device; I do not want anyone to be limited. I am sure I will discover more disparities to consider as I evolve throughout my program and I am excited to see how they help mold my future work.