Bias in Pediatric Cardiac Transplantation

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Pediatric Heart Transplant Society (PHTS) has advanced the science for children listed and those undergoing heart transplantation for three decades 1. These progresses are due to the collaborative and multi-disciplinary engagement by a variety of pediatric heart transplant (HT) clinicians nationally and internationally. As a community, we are now increasingly listing recipients at higher risk for post-HT mortality and yet demonstrating improved post- transplant outcomes for this cohort 1-3. As the PHTS community looks forward to the future, one critical issue to evaluate and address is improving access for children in need of HT.

The HT listing practices are variable across institutions, but most typically have input by a team of clinicians, namely the transplant physician, surgeon, infectious disease specialist, pharmacist, nutritionist, social worker and, hepatologist to name a few. The ultimate decision to list a child for HT is based on the collective review of this team's medical opinion as to the suitability for transplant. In such circumstances, it is possible for each individual's implicit (unconscious) bias, if any, to affect their review and decision-making process, and this can hence affect who gets listed for HT.

It is well known that racial/ethnic and socioeconomic disparities exist in pediatric HT 4-6. It is also known among a variety of healthcare disciplines that there is an implicit bias against racial/ethnic minorities and against individuals from lower socioeconomic neighborhoods 7, 8. The PHTS Healthcare Disparities Taskforce was formed in 2020 and aims to understand the impact of clinician bias and social determinants of health on pediatric heart transplant outcomes scientifically, and ultimately provide the society with education and tools to reduce and eliminate healthcare disparities. A recent project that members of the PHTS healthcare disparity taskforce conducted was to evaluate the degree of implicit racial and socioeconomic bias among pediatric HT clinicians 9.

A cross-sectional survey was conducted between June to August 2021, and survey respondents were asked to fill out demographic questions followed by explicit and validated implicit race and socio-economic questionnaires (Implicit Association Tests, IAT). Of 500 invitations sent, 91 (18%) responded for the race test, 70 (14%) for the socioeconomic status test and 44 (8%) for both tests. Given that data was incompletely filled by a few respondents, the final analysis cohort included 78 responses for the race and 52 for the socioeconomic status test. Most of the study respondents were physicians, aged 40-50 years, female and White.

Main study findings:

There was moderate implicit preference for White over African American individuals.
There was strong implicit preference for people from higher socioeconomic status to those from lower socioeconomic status.
There was strong explicit education bias for people with higher education.

Implications and next steps

As heart transplant clinicians, the first step is to be aware that we all harbor unconscious biases that may be very different from our egalitarian explicit beliefs. As we have shown, there was lack of correlation between our implicit and explicit biases. This work is an important first step in raising awareness around the issue. A good exercise for all pediatric heart transplant programs may be to ask all clinicians involved in decision making to take the implicit tests on a routine basis. These results do not have to be publicly reported but will allow for self-reflection. Also, it has been shown that merely taking the implicit test leads to a wider acceptance of under-represented minorities 10. Since the publication of this study, a variety of webinars have been provided by experts studying bias mitigation strategies to help all of us in the community. Subsequent work should focus on how our implicit preferences ultimately affect our decision-making regarding allocation of advanced heart failure therapies, our interaction with our families and patient's adherence to our recommendations.

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