



How Sword is solving health disparities in MSK care



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Pain affects everyone, but not everyone can get the care that they need to overcome it. Persistent disparities prevent many people from receiving quality treatment and achieving optimal health.

It's estimated that 80% to 90% of health outcomes are dictated by social determinants of health, including employment status, education, housing, transportation, dietary habits and more.¹ The COVID-19 pandemic has only exacerbated many of these issues.

At Sword Health, we want to change this reality—for good.

We're on a mission to free 2 billion people from pain. We're doing so with the keen awareness that particular populations, including racial and ethnic minorities, less privileged socioeconomic communities, and underserved rural populations, face entrenched barriers to care and experience worse health outcomes because of it.

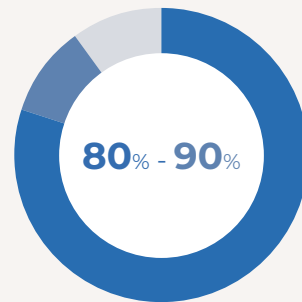
Since the beginning, we have developed our digital health program with the goal of bringing lasting pain relief to as many people as possible—regardless of their background, where they live, or how much they earn.

Everyone deserves relief from pain, and Sword's virtual physical care program was designed to drive this universal aim.

Here are four key ways that we are actively dismantling disparities in healthcare.

“Of all the forms of inequality, injustice in health is the most shocking and the most inhuman.”

Martin Luther King Jr.



80% to 90% of health outcomes are dictated by social determinants of health, including:

- employment status
- education
- housing
- transportation
- dietary habits

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01 Broadening access to care with innovative technology

Sword was first in the industry to prove that a virtual physical therapy program could drive the same or even better outcomes than traditional, in-clinic treatment.² Our Digital Therapist allows members to perform their prescribed exercises at a time and place of their choosing — all under the supervision of licensed doctors of physical therapy. There's no need to book an appointment, drive to the clinic, or take time off work — all factors that contribute to the majority of PT patients not fully adhering to their prescribed treatment.³

We know that Black, Hispanic and minority patients do not access telehealth as much as their Caucasian counterparts. They're more likely to visit the emergency room or make an in-clinic visit instead of using a telehealth service.⁴ Across the board, they experience worse health outcomes than white patients, including after rehabilitation.⁵

We're striving to change all that. The increased convenience, accessibility, and adherence that Sword provides is leading to better outcomes for these historically underserved groups (see details of our health disparity study below).



02 Offering low-cost options to expensive interventions

When it comes to income-based disparities in health, the United States has some of the worst outcomes. Americans who are poor are nearly five times as likely to be in bad or only fair health when compared with people who are affluent. They're also three times more likely to limit their physical activity due to chronic illness.⁶

To combat some of these income-based barriers, Sword comes at no cost to most members. By partnering with employers, labor unions, and health plans, Sword offers our digital programs as a care management or workplace benefit with zero out-of-pocket costs. This model ensures that the people who are most in need of high-quality, affordable physical care can get it without financial burden.

Sword is also designed to steer members away from expensive, invasive interventions such as back and knee surgery. Instead, our digital program relies on the proven benefits of physical therapy, the mainstay, non-invasive treatment for MSK pain that also happens to be more effective than surgery in most cases. This is crucial because studies show that Black and Hispanic populations are more at risk for receiving low-quality tests and treatments, such as inappropriate imaging for low-back pain.⁷

By making virtual physical therapy available to all, Sword prevents unnecessary surgeries and gives everyone equal access to best-in-class treatment options—at no cost to members.

Income-based disparities

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03 Eliminating the hurdle of transportation

Transportation has been shown to be a major barrier to healthcare access⁸, especially for low-income earners and people living in rural areas. The burden and cost of getting to a healthcare provider or facility can lead to missed appointments, delayed care, unmet health needs, exacerbation of chronic conditions, and generally poorer health outcomes. In fact, each year, nearly 4 million people in the U.S. do not obtain medical treatment due to transportation issues.⁹

The convenience of Sword's platform means members can get help without disrupting their lives. Our portable Digital Therapist is designed to provide 24/7 access to therapy, eliminating the need for transportation and other barriers, such as taking time off from work to get treatment. In fact, up to 48% of our member sessions occur between 6 pm and 8 am, and 22% take place on weekends. When most clinics are closed, Sword is available. For many working-class individuals, this is the difference between getting the care they need and the alternative—continuing to live in pain.

Sword also provides hotspots at no cost to members who don't have access to reliable, high-speed Internet service, a common problem in rural areas.

Social Deprivation Index (SDI)

The majority of Sword's member base resides in areas with low Social Deprivation Index (SDI), but about 11% reside in highly socially deprived areas.

Members in these communities tend to be younger, more obese, less educated, and belong to a higher proportion of non-white ethnicities.

Our analysis shows no effect of SDI scores on recovery pathways in any of the clinical outcomes that we measure, proving that patients who were more socially deprived benefited equally from our digital program.

Also, members without Internet access (to whom we provide hotspots) do present a worse productivity status at baseline. However, absolute changes in all outcomes at 12 weeks were no different between these members and those with Internet access.

04 Delivering personalized care that addresses each member's needs

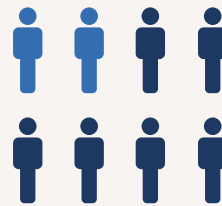
Systemic racism exists in healthcare. It sustains health inequities within communities of color that put these populations at greater risk of illness and death across a wide range of conditions, including MSK disorders. Racism denies an individual's humanity, value and uniqueness. Backed by a diverse team of physical therapists, Sword's program is built on delivering personalized care tailored for each member's specific goals, challenges, and environment.

Each member is matched with a dedicated doctor of physical therapy who guides them through 100% of their treatment, so they never feel alone on their healing journey. Approximately a quarter of our PTs come from underrepresented minority groups and 11% are bilingual or multilingual. Every PT receives sensitivity training from organizations such as PT Proud to build equitable values. We want our members to see themselves in our program so they feel comfortable getting the treatment that they need.

At Sword, our goal is to eliminate as many obstacles to a pain-free life as possible for our members. This cannot be done without recognizing that many people face unjustified

barriers to getting good care, and without the strongest commitment to overcoming entrenched health disparities—in action, not just words. We cannot overcome pain without also striving to overcome systemic inequities in every way.

Sword Health's PTs



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Sword publishes first paper on racial disparities in digital MSK care

Black and Hispanic patients come to healthcare providers with more severe pain and disability than the average patient. This is true throughout the healthcare sector. Unfortunately, in traditional healthcare, these are the patients who also experience the worst outcomes. They generally don't make the same gains as white and Asian patients.

By overcoming the traditional barriers of time, transportation and cost, Sword is able to dramatically improve the outcomes that we have historically seen in Black and Hispanic patients. Indeed, with Sword, they are more likely to achieve a 30% improvement in their pain scores.

In the first study of its kind on the impact of racial differences on outcomes in digital MSK care, we were able to demonstrate that by overcoming social determinants of health barriers that disproportionately impact Hispanic and Black patients, we can truly equalize health outcomes.

We found that Black and Hispanic patients had higher MSK burden at baseline (as

shown in previously published data), but with Sword also higher likelihood of pain improvement, such that, by the completion of our program, pain and disability levels were similar across all racial and ethnical backgrounds.

The results buck against published literature showing that minority groups generally have worse outcomes when going through rehabilitation programs. This provides further evidence that Sword's digital program can drive substantial health improvements in communities that have historically experienced poor outcomes.

The cohort of 1,840 patients was diverse, and had a racial and ethnical mix similar to the proportions of the general U.S. population. It's the first peer-reviewed study to specifically assess the impact of race on engagement and outcomes with patients using a virtual MSK program.

It also demonstrates Sword's tremendous value in improving access to MSK care and promoting health equity among historically underserved populations.

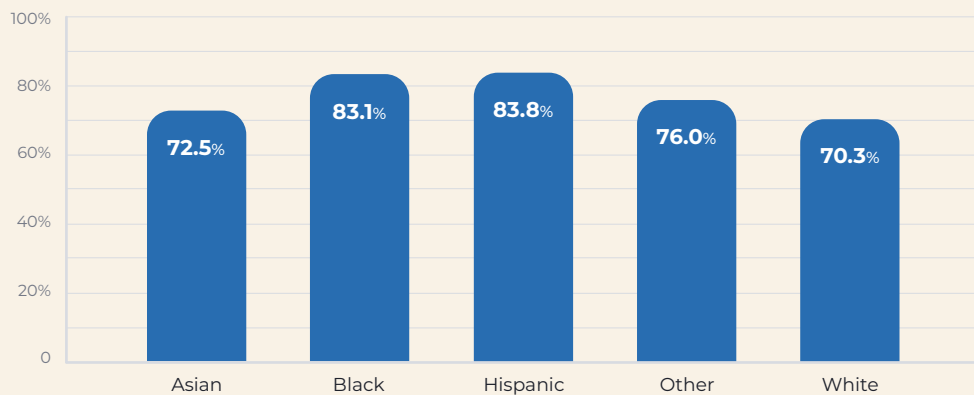


Figure 1: Percentage of patients meeting 12-week MCID for pain, $p=0.02$ across all groups.



Conclusion

At Sword, our mission is to put people before profit. That's why we've invested heavily to provide the most effective, most clinically validated, and most convenient digital physical therapy program available to all populations, regardless of race, sexual orientation, location, or socioeconomic status.

We're proud to work with the best employers, labor unions, and health plans to increase access to the highest quality physical care and free the world from pain.

Reach out to Sword Health today and partner with us to improve health equity at your organization.

Footnotes:

1. <https://nam.edu/social-determinants-of-health-101-for-health-care-five-plus-five/>
2. <https://www.nature.com/articles/s41598-018-29668-0>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1661624/>
4. <https://pubmed.ncbi.nlm.nih.gov/32866249/>
5. <https://www.kff.org/racial-equity-and-health-policy/report/key-facts-on-health-and-health-care-by-race-and-ethnicity/>
6. <http://www.commissiononhealth.org/PDF/ObstaclesToHealth-Report.pdf>
7. <https://www.healthaffairs.org/doi/10.1377/hlthaff.2016.1416>
8. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4265215/>
9. <https://www.aha.org/aharet-guides/2017-11-15-social-determinants-health-series-transportation-and-role-hospitals>