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JOAN BANKS-SMITH
00:08

[music] I'm Joan Banks Smith for Kessler Foundation's Fast Takes, research that changes lives. In this episode, I spoke with doctors Amanda Botticello, assistant director for our Center for Spinal Cord Injury Research and Outcomes and Assessment Research, and Lauren Murphy, associate research scientist, also from our Center for Spinal Cord Injury Research and Outcomes and Assessment Research. We talked about their peer reviewed article, greener on the other side? An Analysis of the association between residential green space and psychological well-being among people living with spinal cord injury in the United States, which was published in the Journal Nature on January 13th, 2022. This study was funded by the Craig H. Neilsen Foundation grant numbers 639798 and 290518. Dr. Murphy, can you share with us the main takeaways of this study?

LAUREN MURPHY
01:05

The goal of the study was to analyze the association between residential green space and psychological well-being among adults living with chronic spinal cord injury. There is growing evidence that the characteristics of the communities where people live, such as community socioeconomic characteristics or land use mix, matter for people living with spinal cord injury. Community characteristics like these have been found to influence outcomes like participation, social integration, functional independence, and perceived health for members of the spinal cord injury community. In this analysis, we wanted to understand the association of community characteristics with psychological well-being for people with spinal cord injury. There is a high rate of mood disorders, including depression, in this population, and it's important to understand how this risk varies across communities in order to develop interventions and public policy aimed at reducing barriers to community life for people with disabilities. In the general population, evidence suggests that one's mental health can be positively influenced by exposures to green spaces or natural areas and parks. Green space can positively affect mental health by providing people with opportunities for recreation, relaxation, and social interaction with their community. To evaluate whether exposure to green space has similar benefits for the spinal cord injury community, we use data from a large cross-sectional survey study of quality of life among people living with mobility impairment from chronic spinal cord injury in the United States. We used data from the US Geological Survey to create measures of green space. We used information about two types of land cover, natural green space, such as forest, scrub, or shrubland, or wetlands, and developed green space or human built green spaces for recreation or said purposes, such as a park.

MURPHY 02:53

We calculated the proportion of both types of green space within participant's residential environments at two levels, the amount of green space in participant's immediate neighborhood, which was measured as the half mile area around the participant's home, and the amount of green space within the larger surrounding community, which was measured as the 5-mile area around their home. We then analyzed the association of both types and levels of green space with psychological well-being. Contrary to expectations, we found that at the larger community level, having a moderate amount of natural green space was associated with poor

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psychological well-being compared to living in a low green space area. Similarly, participants who had a moderate amount of green space for parks and recreation in their immediate neighborhoods also had poorer psychological well-being when compared to those living in low green space areas. Taken together, these results suggest that the psychological benefits of exposure to green space that have been found in the general population may not extend to people living with mobility disabilities like spinal cord injury.

BANKS-SMITH 03:54

Dr. Botticello, what is the impact and next implications of this publication to the field?

AMANDA BOTTICELLO
04:00

One of the goals of our research on the environment is to understand the impact that places where people live, work, and socialize have on health through the lens of disability. The outcome of this study was somewhat counterintuitive to what we expected because our initial hypotheses were formed on patterns that have been observed in the general population. This is not always a negative. What this does for us is actually suggest an opportunity from where we can better understand and intervene. So work that's conducted on the general population we know does not always fully represent the perspectives of people with disabilities. And in contrast, our study represents the perspectives of people who, by nature of their physical impairments, may have to navigate their surroundings a bit differently. The vast majority of people in our study use wheelchairs or other assistive technology for mobility outside the home, and in that sense, proximity to green space making for a less of a positive psychological benefit because we know that many parks and recreational areas are not always accessible to people who need to rely on assistive technology. Furthermore, living in a green leafy suburb often requires access to your own transportation to go to work, or to access the services that you need. And we know that people with disabilities often experience transportation difficulties, and this could be one of the reasons that green space has a negative rather than a positive association with mental health in our study.

BOTTICELLO 05:33

In terms of next steps for this research, what we would really like to do is go further to understand why exactly proximity to natural green space and some of the man-made places, such as our parks and recreational areas, may not be as beneficial, at least at the moment, to people living with mobility impairments. We have a few areas that we'd like to explore and further research. The first is really looking at the accessibility features that are key for people living with mobility impairments. As we know that some of the man-made natural spaces like parks, ball fields, and nature trails are not always constructed with the needs of people with disabilities in mind. The second is really delving into the availability of mobility devices themselves. There are wheelchairs and other types of technology that are made for outdoor use and would really encourage physical activity and other types of outdoor activity. However, there's a tremendous cost associated with these devices and not everybody is able to afford this type of technology. Moving forward, we hope to better understand this barrier in order to help more people advocate to get the technology they need. And finally, there is the issue of transportation. So living in communities that are located closer to nature does have some trade-offs in that people who live in urbanized area may have better access to transportation that can help them take care of their daily

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needs. So we'd really like to explore how transportation access in terms of places where people live affects their mental health and well-being.

BANKS-SMITH 07:13

To learn more about doctors Botticello and Murphy and their peer reviewed article, links are in the program notes. Tuned in to our podcast series lately? Join our listeners in 90 countries who enjoy learning about the work of Kessler Foundation. Be sure to subscribe to our SoundCloud channel, Kessler Foundation. For more research updates, follow us on Facebook, Twitter and Instagram. Listen to us on Apple podcasts, Spotify, SoundCloud or wherever you get your podcasts. This podcast was recorded on March 7th, 2022, remotely and was edited and produced by Joan Banks Smith, creative producer for Kessler Foundation.

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