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ScienceDirect
Preventive Medicine 46 (2008) 80–81
Preventive Medicine
www.elsevier.com/locate/ypmed

Letter to the Editor

Impact of a new bicycle path on physical activity

To the Editor:

There has been a great deal of concern about obesity, with many calls for Americans to increase physical activity. In spite of all the attention and exhortations, the Outdoor Industry Foundation reported that bicycling is declining, having dropped from 3.9 billion outings in 2004 to 3.1 billion outings in 2005 (Outdoor Industry Foundation, 2006). The most dramatic drop in outings was for American females, who averaged 18 paved road biking outings in 2005 compared to 28 in 2004.

Although new bike paths and roadways are frequently being built, there are few studies using objective measures in the United States that prospectively document increases in physical activity in response to environmental changes (Morrison et al., 2004; Killoran et al., 2006). Studies of the association between bicycling and the built environment have typically been cross-sectional (Nelson and Allen, 1997; Dill and Carr, 2003) and when change in the built environment is assessed for its impact on physical activity, studies have included repeated cross-sectional self-reports (Ogilvie et al., 2006), retrospective accounts of use over time (Boarnet et al., 2005), or simulations of what is expected (Niemeier, 1996). A recent review of alterations in bike paths noted three relevant studies, one with a 3% increase in biking after 3 years, the other two resulting in bicycling declines (Ogilvie et al., 2006).

With the trend in bicycling down, even though expenditures for biking infrastructure are up, we wanted to determine whether the completion of Los Angele's Orange Line bike path in 2005 would impact the numbers of people biking or using other forms of active transport. We conducted an observational study immediately before the path was completed and then nearly 1 year after it officially opened.

We selected two areas along the bike path to represent different socio-economic conditions. The first was a low SES area, the Van Nuys station, where 40.8% of households are considered living in poverty (US Census, 2000). We compared change path use there with a high SES area (only 8.9% of households in poverty) which was about 3 miles (and 3 bus stops) away at the Balboa station. We also looked for pre-existing bike paths in both areas to examine the possibility that bike users simply switched from an old path to the new one, rather than the new path attracting new users.

The path at Balboa was already existing and would be tied into a longer stretch built along a new bus way, so our observations would measure whether increasing connectivity would result in a greater level of bicycle use. We also found a pre-existing Class II bike lane (bikes share the streets with cars but have the area designated as a bike path with white stripes) several blocks south of where the bike path would pass the new Van Nuys bus stop. To see if riders simply switched locations, in addition to the two stations at Van Nuys and Balboa, we also observed this pre-existing bike path (Van Nuys Alternative) as a third point before and after the construction was completed.

Two trained observers were stationed at each of these three points to observe bike lane usage for 7 consecutive days during both pre- and post-bike path construction. During weekdays they observed the path between 7:30 a.m. and 8:30 a.m. and 4:30 p.m. and 5:30 p.m. to capture potential changes related to commuting. On weekends they observed between 9:30 a.m. and 10:30 a.m. and between 3:00 p.m. and 4:00 p.m. We could not be sure that these time periods represented the entire day, but using the same daily time periods and same month/season before and after construction allowed direct comparisons. Observers counted people in the lanes by gender, age grouping [child, teen, adult, and senior], race/ethnicity, activity level, and activity type. Those passing by were coded as biking or skating or if they were pedestrians as sedentary (e.g., being pushed), walking, or jogging/running.

Although the bike path at Van Nuys was not officially opened at baseline, it was accessible and being used prior to completion. During the baseline observation period we counted 279 users at Van Nuys, 46 at the alternative path, and 565 at Balboa for a total of 890 individuals. A year later, the number had increased to a total of 391 at Van Nuys, a small decrease to 39 at the alternative path, and an increase to 799 at the Balboa station (an overall increase of 38%).

Increases were seen among males, but not females. At the Van Nuys station increases were among Hispanics and African Americans and among Whites and Hispanics at the Balboa station. The increase among Asians was barely significant at Balboa. In contrast, the number observed on the Van Nuys alternative bike path a few blocks away from the bus did not change significantly, leading to the possibility that the increased users of the new path represented new riders rather than a displacement of existing riders.

The increase at the Balboa station was among bikers, thus supporting the importance of connectivity as an attribute for facilitating physical activity (Frank et al., 2004). The increase in walkers at the Van Nuys station is consistent with the fact that mixed land uses and higher densities tend to favor walking behavior (Frank et al., 2005).

When considering age groupings, the number of adults increased substantially along the new bike path areas, but not at

0091-7435/$ - see front matter
doi:10.1016/j.ypmed.2007.07.022

the pre-existing bike path. The increase in children, teens, and seniors was quite small compared to the numbers of adults. The largest increases were during the week, with no significant differences in the number of users on weekends.

The creation of the bike path adjacent to the new bus way did appear to increase bike ridership during commuting weekday hours. We did not observe other times, so it is not possible to estimate the total benefit of the endeavor. We were unable to document total path use, which might be more easily accomplished with electronic devices. This method, however, would not allow for detailed information on user age, race, gender, and type of activity. Finding a way to calculate cost per person and the value of such infrastructure investments would help policy makers in decisions about future improvements. Furthermore, research on understanding whether the disparity in biking between males and females is due to social, cultural, or physical factors should be undertaken.

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Deborah Cohen*
Amber Sehgal
Stephanie Williamson
Daniela Golinelli
Nicole Lurie
RAND Corporation, 1776 Main Street, Santa Monica, CA 90407, USA
E-mail address: dcohen@rand.org.
*Corresponding author. Fax: +1 310 260 8159.

Thomas L. McKenzie
San Diego State University, USA

Peter Capone-Newton
California Department of Health Services, United States
Los Angeles County Department of Public Health Chronic Disease Control Program, USA