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VISUAL ESSAYS AND LAYOUT PLANS



Winds of change: the case of TransMiCable, a community-engaged transport intervention improving equity and health in Bogotá, Colombia

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RESUMEN

Las transformaciones urbanas tienen el potencial de impactar la salud de las personas; particularmente el transporte, como determinante social de la salud, es fundamental para la mejora de la equidad y la salud en las ciudades. El TransMiCable de Ciudad Bolívar en Bogotá fue acompañado por una transformación urbana integral aumentando el acceso a servicios públicos y espacios de recreación, entre otros. Este trabajo busca ilustrar cómo el TransMiCable puede influir positivamente las desigualdades sociales y de salud en una comunidad autoconstruida. Haciendo uso de la foto-etnografía, realizamos una reflexión a través de texto e imágenes; con la cual pudimos identificar que el TransMiCable mejoró el acceso de la comunidad al resto de la ciudad y redujo los tiempos de viaje; también facilitó el acceso a lugares culturales y de recreación; la intervención urbana aumentó las percepciones de seguridad, la satisfacción con el barrio y la calidad de vida relacionada con la salud, reduciendo las percepciones de estigma. De tal manera, las intervenciones urbanas integrales y participativas contribuyen a mitigar las desigualdades en los determinantes sociales de la salud. Estrategias innovadoras, como el foto-ensayo, pueden proporcionar un análisis crítico y reflexivo para entender la salud como un fenómeno social y cómo el entorno construido influye en los determinantes sociales de la salud.

RESUMO

Intervenções de transformação urbana têm o potencial de afetar a saúde das pessoas; O transporte, em especial, como um determinante social da saúde, é fundamental para fomentar a equidade e a saúde nas cidades. A implementação do TransMiCable na Ciudad Bolívar em Bogotá foi acompanhada por uma transformação urbana abrangente que facilitou o acesso, por exemplo, a serviços públicos e a espaços recreativos. Este artigo busca ilustrar os efeitos positivos do TransMiCable na diminuição das desigualdades sociais e na saúde em uma região de vila-favela da cidade. Usando o método de foto-etnografia, é possível fazer reflexões por meio de textos e imagens e identificar a melhoria proporcionada pelo TransMiCable no acesso da comunidade a outros espaços da cidade com redução dos tempos de viagem; a espaços culturais e recreativos; na percepção de segurança, satisfação com o bairro e qualidade de vida relacionada à saúde e, consequentemente, na redução das percepções de estigma da comunidade. Intervenções urbanas abrangentes e com participação da comunidade local contribuem para a diminuição das desigualdades nos determinantes sociais da saúde. Estratégias inovadoras, como o foto-ensaio, podem fornecer uma análise crítica e reflexiva para entender a saúde como fenômeno social e as formas com que o ambiente construído pode influenciar os determinantes sociais da saúde.

ABSTRACT

Transport can enhance equity and health outcomes in large cities. Using photo-ethnography, our team aimed to illustrate how TransMiCable, an integrated urban transport intervention, can positively affect social and health inequities in a self-built community in Latin America. TransMiCable connects an outskirt area of Bogotá with the rest of the city, reducing travel time and improving access to cultural and recreational spaces. The urban transformations reshaped community perception, increasing neighborhood satisfaction and quality of life while reducing social stigma. Through integrated urban interventions and cross-sectoral work, policymakers can mitigate inequities in social determinants of health.

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PALABRAS CLAVE

cable aéreo; América Latina; salud urbana; transporte; etnofotografía

PALAVRAS-CHAVE

Teleférico; América Latina; saúde urbana; transporte; foto-ethnografia

KEYWORDS

Cable car; Latin America; urban health; transport; photo-ethnography

Introduction

The image of the cable car rising over messy patches of self-built houses aptly illustrates some of the key features of transport and urban form challenges in Latin

American cities as well as strategies to address them. Latin America is one of the world's most urbanized regions, with large populations living in informal and self-built settlements while experiencing high levels of inequality (Organization for Economic Co-operation



Figure 1. TransMiCable in Ciudad Bolívar, Bogotá, Colombia. Camila Fernández (2021).



Figure 2. Self-built houses in Cuidad Bolívar mountains. Camila Fernández (2021).

and Development (OECD) 2015, Belizán *et al.* 2007). However, the region has also become a locus for innovative urban policies and interventions that aim to positively affect the health and well-being of citizens (Sarmiento *et al.* 2017). Transport is a basic human need and is therefore a vital point of intervention to improve equity and health in large cities.

Since December 2018, an aerial cable car, known as the TransMiCable, has crossed Ciudad Bolívar: a city's area of 360 self-built neighborhoods (Bogotá Cómo Vamos 2020) on highly sloped terrain in the mountainous southwestern outskirts of Bogotá, the Colombian capital (Figure 1). The cable car transit line covers 3.34 kilometers that connect Ciudad Bolívar to Bogotá's public transport system. In Ciudad Bolívar, TransMiCable was implemented along with a major urban intervention aimed at enhancing not only transport but also the social

and built environment. This intervention has increased access to public services, recreation, cultural activities, community centers, and included the creation of a civic services office, among others (Sarmiento *et al.* 2020). Through this essay using photo-ethnography, we aim to illustrate how TransMiCable, an integrated urban transport intervention, can positively affect social and health inequities in Ciudad Bolívar, a self-built community in Latin America.

Social and health inequities in a self-built community

Ciudad Bolívar (CB) covers an area of 130 square kilometers with 776,351 inhabitants (Secretaría Distrital de Salud de Bogotá 2021). Farmers, indigenous and afro-descendant populations, among others, make up CB



Figure 3. Neighborhoods in highly sloped terrains. Camila Fernández (2021).

population (Secretaría Distrital de Salud de Bogotá 2021). In 1950, people started building their houses near local brick factories and the Tunjuelito River (Albarracín *et al.* 2020). Migratory flows of underserved communities, including victims of forced displacement, coming from across Colombia accelerated the urbanization of CB (Madrigal and Sánchez 2012). In 1984, CB was officially declared an administrative area of Bogotá (Álvarez and Orozco 2015). As CB grew, new neighborhoods took root in the mountains (Figure 2). People coming from all backgrounds and with a multitude of hopes and sorrows coexist in these multicultural neighborhoods.

Despite people coming looking for better opportunities, inhabitants of these lands struggle with the brutality of an unequal city (Figure 3). CB has unique conditions of poverty and health inequalities. According to the Multidimensional Poverty Index, which included five dimensions (educational conditions of the home, conditions of childhood and youth, health, work, and access to home public services and housing conditions), it is estimated that 9% of CB's population lives in multidimensional poverty, one of the highest rates in the city (Secretaría Distrital de Gobierno de Bogotá 2020). Moreover, CB has an unemployment rate of 11% (Secretaría Distrital de Gobierno de Bogotá 2020), with a labor informality



Figure 4. 'Mercado de las pulgas' (meaning 'Flea Market' in Spanish), as a reflection of labor informality. Camila Fernández (2021).

rate of 54% (Figure 4) (Secretaría Distrital de Salud de Bogotá 2017) and high levels of child labor (Secretaría Distrital de Salud de Bogotá 2021). Neighborhood rumors say that the hardest part of living in CB is simply survival. A devastating consequence of poverty in CB is hunger: 22% of children have chronic malnutrition or experience developmental delay in this territory (Secretaría Distrital de Gobierno de Bogotá 2020).

Children in CB grow up facing limited opportunities and deprivation. The educational coverage rate is low (67%) (Secretaría de Educación de Bogotá 2020). Within Bogotá, CB has the lowest average years of education (10.5 years) in people aged 15 to 24 (Departamento Administrativo Nacional de Estadística (DANE) 2017), and the highest proportion of illiterate people (2%) (Secretaría Distrital de Planeación (SDP) 2017). Although school attendance is higher than 95% among those aged 5 to 15 years, the proportion decreases to 82% among 16- to 17-year-olds and to 29% among 17- to 25-year-olds (Secretaría Distrital de Planeación (SDP) 2017). In addition, the use of psychoactive substances is reported by about 40% of young people who drop out of school (Secretaría Distrital de Salud de Bogotá 2017). According to available data, CB is among the areas with the highest prevalence of consumption and dependence on

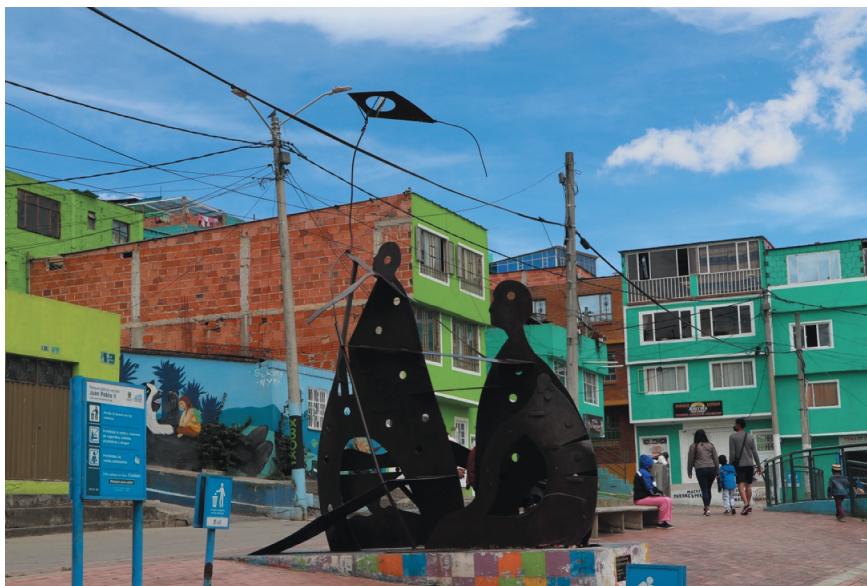


Figure 5. In memory of a massacre. Ciudad Bolívar has been haunted by armed groups, 'social cleansing', and micro-trafficking. Camila Fernández (2021).

psychoactive substances in the city (Secretaría Distrital de Salud de Bogotá 2017). Nearly half of the users of psychoactive substances begin taking these drugs in adolescence: 42% of users are adolescents (Secretaría Distrital de Salud de Bogotá 2017), and the average age of initiation of consumption is between 12 and 13 years old (Secretaría Distrital de Salud de Bogotá 2017). Additionally, this territory has high rates of violent deaths due to homicides (Figure 5) and road traffic injuries (Secretaría Distrital de Salud de Bogotá 2018, Secretaría Distrital de Gobierno de Bogotá 2020).

During the COVID-19 pandemic, inequalities in CB were exacerbated. Mandatory quarantines and the closure of non-essential businesses in the city affected many workers and their families. People in CB suffering from hunger, anguish, and lack of employment, hung

red flags on their windows, doors, and roofs, calling for help (El Tiempo 2020). The red flags were a symbol of the increased inequalities in the area. Moreover, since the beginning of the pandemic, the number of reported personal injuries and robberies in CB has increased (Secretaría de seguridad convivencia y justicia de Bogotá 2021).

The community also has major concerns about urban form and environmental issues, both of which have been acknowledged as relevant determinants of urban health (Galea *et al.* 2005). Some living conditions and neighborhood disorder issues of concern include poor housing quality, unplanned street design and quality, and inadequate garbage management in public spaces, among others. Moreover, CB has few open spaces



Figure 6. In memory of a community leader. Camila Fernández (2021).

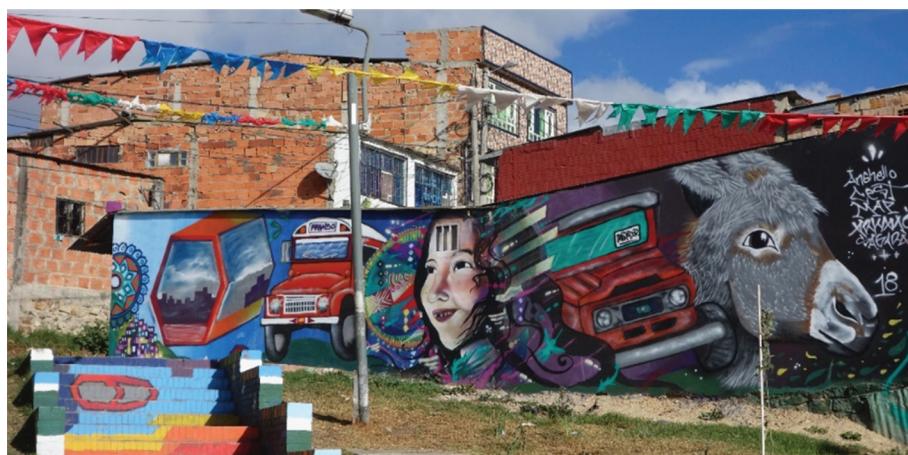


Figure 7. Art mural of the history of transport in Ciudad Bolívar. Camila Fernández (2021).

for sport, recreation, and culture. Within CB, there are only 2.2 square meters of park space per inhabitant (Secretaría de Cultura Recreación y Deporte 2014), and community members say that CB's parks are unsafe places where robberies are common and users of psychoactive substances congregate (Secretaría Distrital de Salud de Bogotá 2017, Secretaría Distrital de Gobierno de Bogotá 2020). To tackle these challenges, community members have engaged with decision-makers to communicate salient concerns, such as the proximity of some houses to garbage dump sites (Departamento Administrativo Nacional de Estadística (DANE) 2017), pollution in the Tunjuelito River and along its banks, the geomorphological risk of floods and landslides, and illegal mining in the mountains.

Community engagement: the key to driving change

People come to this land with more than their luggage and belongings. They come with their traditions, their cultures, their resilience, and their resistance. Dignity has always been a driving force of community action in CB. Through leadership and community building, people have been solving problems for decades, such as improving coverage of public services, relocating houses in high-risk areas, and developing infrastructure for education and culture (Albarracín *et al.* 2020). Moreover, ongoing active, patient, and persistent engagement has allowed local leaders to overcome many challenges long before the state arrived to intervene (Figure 6). Community engagement has also been strengthened through inhabitants' initiatives in sports, art, popular education,¹ and cultural groups (Gómez *et al.* 2014, Albarracín *et al.* 2020).

To tackle limited transport options to formal workplaces, education centers, and health care centers in the city, the community has spearheaded

solutions from donkeys to informal taxis and ride sharing (Villar-Uribe 2019). Motivated by Medellín's Metrocable, inhabitants of CB and community leaders proposed the construction of an aerial cable car (Figure 7) (Sarmiento *et al.* 2020). In 2007 dialogues between community-members and stakeholders facilitated the development of a plan that included the built environment improvements (Albarracín *et al.* 2020).

"Community engagement, advocacy leadership, the Catholic Church, and decision-makers participated in urban renovations in Ciudad Bolívar. Now we have a civic service office, a museum, cultural centers, community halls, parks, paved streets. It was very beautiful, but we had to work for it very hard, hand in hand with decision-makers because we are the ones who know the needs of the territory." (Community leader from Manitas neighborhood in Ciudad Bolívar, Bogotá.)

The cable car, TransMiCable, was the culmination of a decade-long advocacy process of community leaders and community members demanding an appropriate transit system, along with the joint efforts of decision-makers to implement TransMiCable with an integrated urban transformation intervention (Albarracín *et al.* 2020). Civic engagement and cross-sectoral working groups were fundamental in advocating for the project across different government administrations. All together, these efforts created the political will and partnerships necessary for building a healthier city.

The impact of transmicable's implementation: effects on social and health inequities

So far, the observable short-term effects of the implementation of TransMiCable are inherently related to physical and social determinants of urban health and well-being. This transport system contributes to improving access and reducing travel time for the community by connecting them with the rest of the city, including the formal labor market and other services located in different areas



Figure 8. Renovated Park. Camila Fernández (2021).



Figure 9. Neighborhoods at the top of the mountain. Camila Fernández (2021).

of Bogotá. The average daily travel time for TransMiCable users decreased by 22 minutes, representing a 20% reduction compared to previous transportation options; considering that the average displacement in Bogotá takes around 52 minutes (Secretaría Distrital de Movilidad de Bogotá 2020), travel time savings leads to more free time to rest, to spend time with family, and to be present in the community (2020). Additionally, the new transport system improved safety perceptions and comfort during travel time (2020).

TransMiCable and associated urban transformation interventions also improved community satisfaction with the neighborhoods. Other changes to the built environment such as paving streets, painting house facades,

painting murals, and renovating parks reduced perceptions of social stigma and increased the pride of community members in their neighborhood and its physical environment. These interventions also improved their perceptions of the safety of the area and their health-related quality of life. Specifically, TransMiCable increased women's health-related quality of life (2020). The renovation of public parks in CB promotes healthy behaviors such as physical activity and improves the mental health and well-being of its users (Figure 8).

As innovations in urban planning in Medellín have shown, urban interventions' benefits are linked to simultaneous changes in surrounding areas (Corburn *et al.* 2020). TransMiCable's effects



Figure 10. Luchadores inalcanzables (meaning Unattainable fighters in Spanish). Camila Fernández (2021).

are caused by the combination of different components such as accessibility improvements, broader urban development, and a participatory approach. Although the inter-related effects of integrated urban interventions have the potential to impact the social determinants of health, these effects may take time to be observable. Therefore, it is important to continue documenting and evaluating TransMiCable's effects on health and social inequities in CB and whether these effects are maintained in the medium and long term. It is vital to continue implementing subsequent urban interventions in CB in close partnership with communities and decision-makers, based on their specific needs and concerns.

Final remarks and conclusions

Self-built neighborhoods embody the possibilities of a roof over one's head, the anxieties of inequality, and the corruption that haunts the region. Ciudad Bolívar's built environment is full of visual reminders of the area's trailblazers. All over Ciudad Bolívar, self-built construction has left traces of the past (Figure 9). From the cable car, one can see a montage of different eras, stories, and people.

Transport interventions and urban transformation in self-built and informal settlements have the potential to impact people's health and well-being by improving equity on several social determinants of health (Turley *et al.* 2013). Integrated interventions can improve not only transport options and the access the community has to the rest of the city (Azolin *et al.* 2020), they can also enhance access to public services, recreation, and cultural venues. Beyond these impacts, these interventions can strengthen communities by increasing neighborhood satisfaction, community capacity, and social capital (Figure 10) (Dario *et al.* 2008, Milan and Creutzig 2017).

If urban form is the manifestation of widespread inequity in Latin America, it may also be where we can best observe participatory and collaborative efforts to benefit communities that have been previously neglected. Therefore, emphasizing the importance of a 'Health in All Policies' approach for the full spectrum of urban policies will contribute to building more equitable cities in Latin America (Ramirez-Rubio *et al.* 2019). Latin American cities experience inequities in the social determinants of health that stem from the historical conditions of each city, socioeconomic inequities, and disparities related to each community's socio-demographic profile. Through integrated urban interventions and cross-sectoral work with the community and academia, policymakers can mitigate inequities in these social determinants of health, and fundamentally change the way people experience cities in Latin America.

Note

- Such as *Critical Pedagogy* of Paulo Freire.

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No potential conflict of interest was reported by the author(s).

Notes on contributor

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Ethics statement

All phases of the study were reviewed and approved by the ethics committee of the Universidad de los Andes (Acta No. 806-2017; Acta No. 977-2019; Acta No. 984; Acta No. 994-2019).

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