

Residents health status and its influencing factors in the Mission District

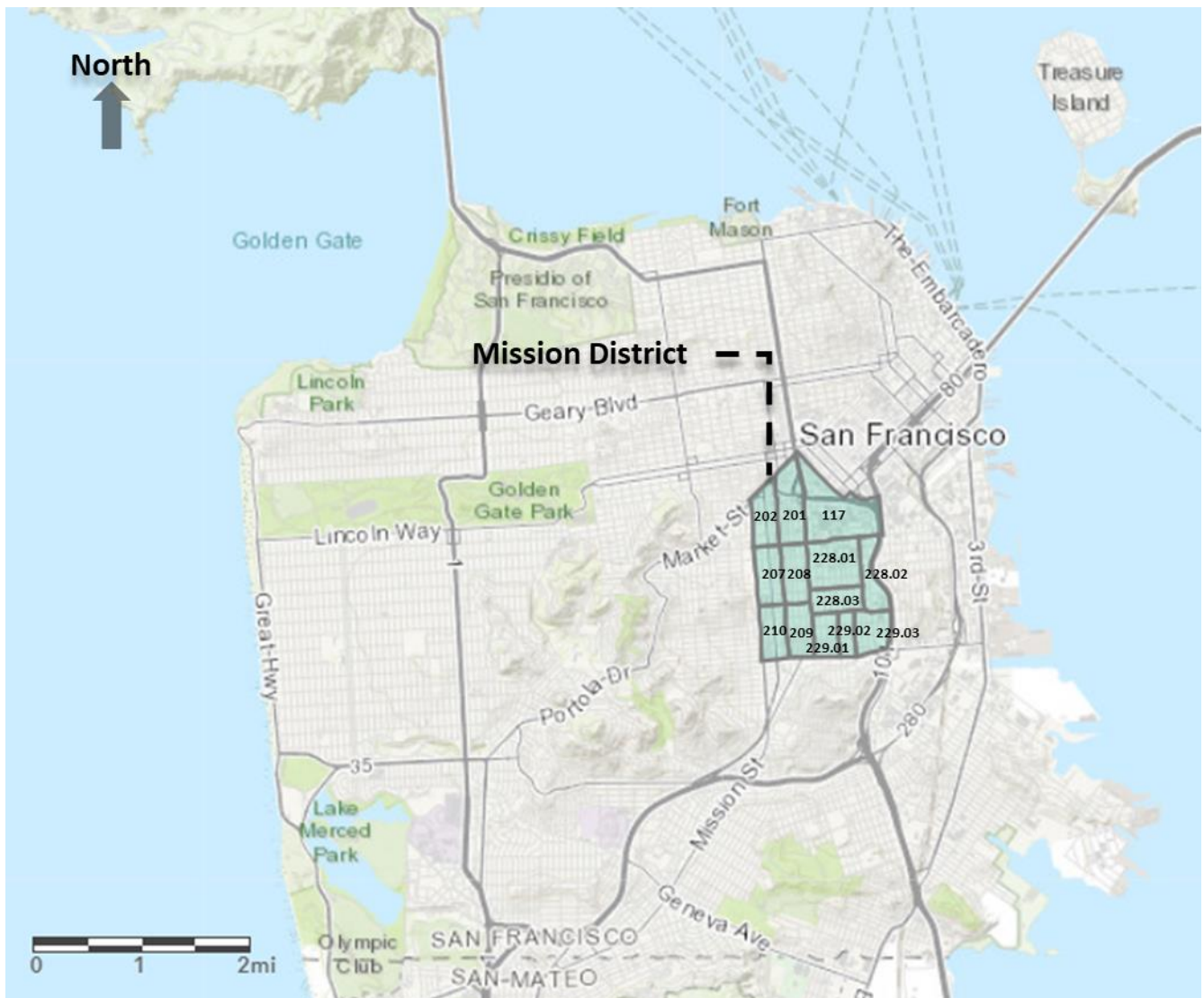
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INTRODUCTION

Location

In this case study, Mission District is defined as census tract 177, 201, 202, 207, 208, 209, 210, 228.01, 228.02, 228.03, 229.01, 229.02, 229.03, thirteen census tracts in total, which is located in east-central part of San Francisco County, California, and is bounded on the east by highway 101, on the north by Market Street, on the west by Dolores Street and on the south by Cesar Chavez Avenue (Figure 1).

Figure 1 Location of the Mission District in San Francisco County



History

The Mission District is featured as “Rather than being a static, clearly bounded geographic area, the Mission is an expanding and contracting entity which retains its symbolic role as the corazón [heart] of San Francisco’s Latino community...”¹.

Since 18th century, the Mission District began to develop and thrive when the Spanish missionaries arrived at this place, followed by various races of immigrants including Irish, German, Mexican, central American, Latin American etc.

In the 1960s, the Latinization of the Mission emerged including the displacement of other communities, immigration, and segregation. From the 1960s to the 1990s, the area served as home to the poor and the disenfranchised, while also serving as the “heart” of Latino cultures. The neighborhood’s battle with poverty is an important component of its trajectory².

In the 1990s, San Francisco’s Mission District appeared to go from working class Latino to hipster bohemian enclave, and many young professionals moved in to Mission District. Within just a few years, commercial real estate prices increased more than fifty percent and rental prices rose. The situation spurred the evictions of hundreds of low-income people and forced widespread displacement².

Therefore, through this long history, the Mission experienced poverty, displacement, and multi-ethnic diversity of San Francisco’s Latino population has played a critical role in mapping the heart of this community’s identity², making the Mission District a racially diverse neighborhood with San Francisco’s largest population of Latinos and a historical landing point for new immigrants³

Health Issues

In the United States, the indicators of health including life expectancy and disease rates vary by neighborhood within the same urban area⁴. The poor and people of color bear a disproportionate burden of disease and early death caused largely by avoidable place-based social determinants of health⁵. An important early study found that residents in a poverty area experienced higher mortality over a follow-up period than residents in non-poverty areas⁶, and the planning processes could fundamentally affect the determinants of health⁷.

Meanwhile, the Mission District, as a community with a similarly diverse population of poor and socially vulnerable individuals, including homeless people, people with a mental illness, drug users, undocumented

¹ Laurie Kay Sommers, “Alegría in the Street: Latino Cultural Performance in San Francisco,” Ph.D. diss., Department of Folklore, Indiana University, 1986, 5.

² Cordova, C. (2005). The heart of the mission: Latino art and identity in San Francisco (Doctoral dissertation).

³ Epstein, E. (1999). Money changing everything in the Mission. San Francisco Chronicle, 18.

⁴ Kawachi, I. & Berkman, L. (2003) Neighborhoods and Health (New York: Oxford University Press).

⁵ Wilkinson, R. & Marmot, M. (2003) The Solid Facts: The Social Determinants of Health, 2nd edn (World Health Organization Regional Office for Europe). Doc.# EUR/ICP/CHVD 03 09 01. <http://www.who.dk/document/e81384.pdf> (accessed 13 July 2005).

⁶ Haan, M., Kaplan, G., & Camacho, T. (1987). Poverty and health; prospective evidence from the Alameda county study. American Journal of Epidemiology, 125, 989–998.

⁷ Jason Corburn & Rajiv Bhatia (2007) Health impact assessment in San Francisco: Incorporating the social determinants of health into environmental planning, Journal of Environmental Planning and Management, 50:3, 323-341

immigrants, and sex workers⁸, it is likely that residents in the Mission are suffer from poor health and the paper intends to explore more on:

- 1) Whether the Mission District remained a colored and disadvantaged neighborhood as it historically used to be?
- 2) What is the current mental and physical health status of adult residents in Mission District compared to San Francisco county?
- 3) What groups of residents are more likely to have poorer health?
- 4) What is related to residents' general health condition?
- 5) What we as planners can do to improve residents' health condition?

To answer these questions, the paper is structured as below:



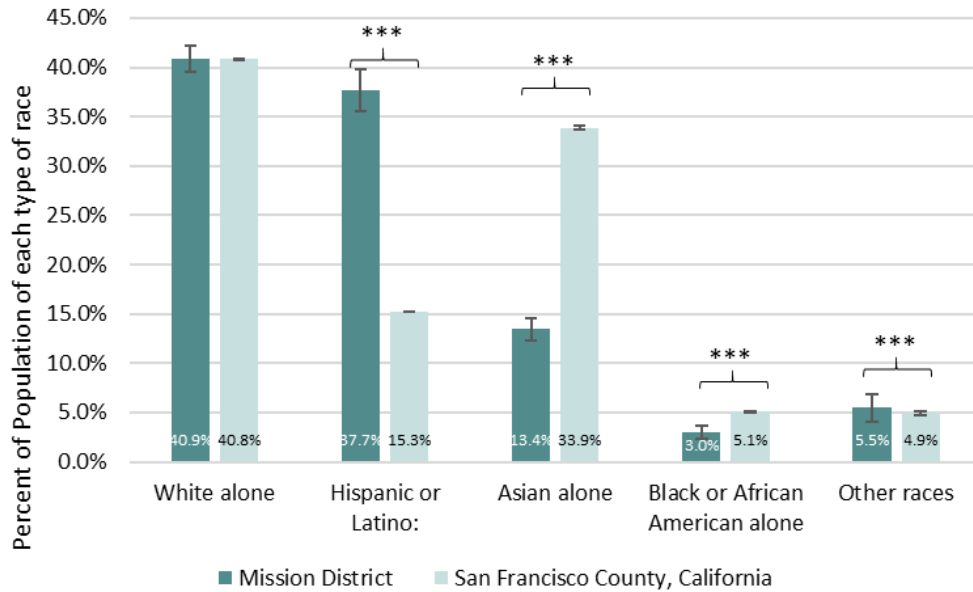
MISSION PROFILE

Racial Composition

The Mission has significantly larger proportion of Hispanic or Latino population than San Francisco county in 2017. According to 2017 ACS data, the majority of residents in the Mission are white (40.9%) and Hispanic or Latino (37.7%), with only 13.4% Asian and 3.0% Black or African American residents. Compared to San Francisco county, though the difference between White alone residents is not statistically significant, the mission has significantly 22.4% higher in ratio of Hispanic or Latino residents and 22.4% lower in the ratio of Asian residents. The Latinization in the history still had impact on the racial composition in Mission remained now, showing as a significantly higher percentage population of Latino.

⁸ Wenger, L. D., Leadbetter, J., Guzman, L., & Kral, A. (2007). The making of a resource center for homeless people in San Francisco's Mission District: A community collaboration. *Health and Social Work, 32*(4), 309.

Figure 2 The Racial Composition of Mission District and San Francisco County



Data Source: 2013-2017 ACS 5-year estimates, Table B03002

Data Universe: Total population. SF County N= 864263 Mission District N=58630

Notes: White alone, Asian alone, Black or African American alone and other races are not Hispanic or Latino

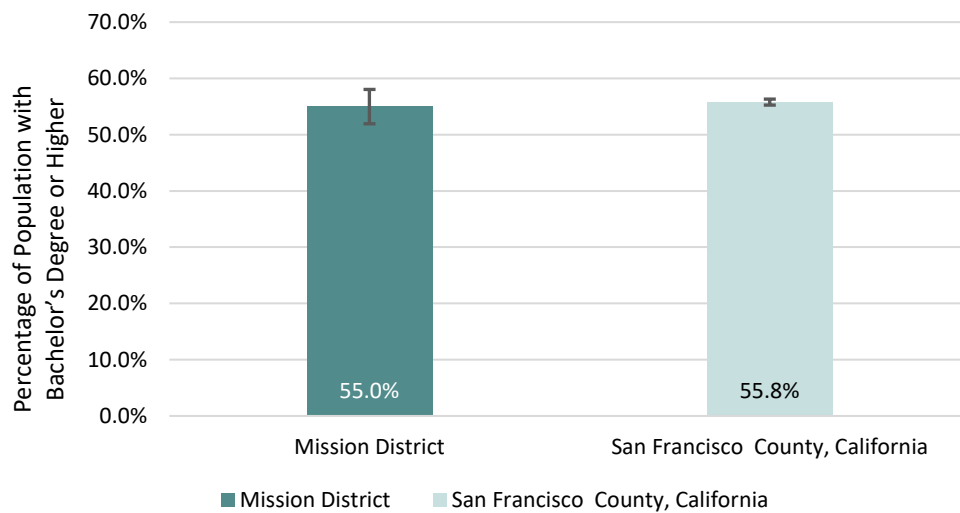
Other races include: Not Hispanic or Latino: American Indian and Alaska native alone, Native Hawaiian and other Pacific Islander alone, some other race alone, and two or more races alone.

***Statistically significant difference at 99% confidence level. Using the z-test, the z score of between proportion of white alone population in Mission and San Francisco is 0.0289<1.645, indicating the difference is not statistically significant

Education Level

The Mission District has similar proportion of residents with bachelors’ or higher degree, indicating that the Mission District is not disadvantaged in educational level. The proportion of population with bachelor’s degree or higher in Mission District is 55.0%, which is statistically the same to the proportion of San Francisco county.

Figure 3 Proportion of Population with Bachelor’s Degree or Higher in Mission District and San Francisco County



Data Source: 2013-2017 ACS 5-year estimates, Table B15003

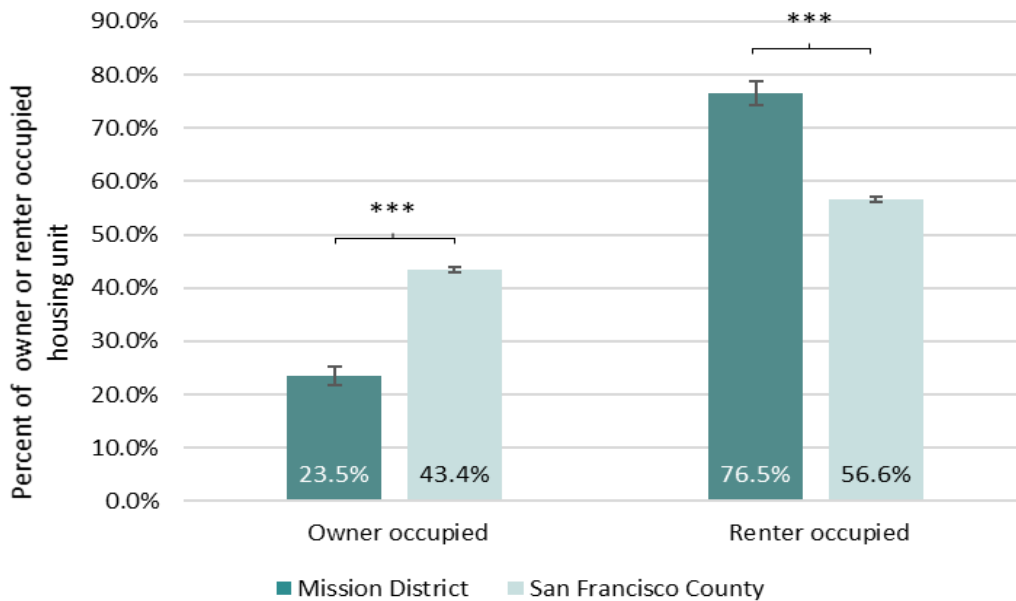
Data Universe: Total population. SF County N= 864,263 Mission District N=58,630

Notes: The z-test shows difference between proportion of population with bachelor's degree or higher in Mission District and San Francisco County is not statistically significant, $z=0.425$ smaller than 1.645

Housing

Most housing units in the Mission District is renter occupied (76.5%). The Mission District has significantly about 20 % larger proportion of renter occupied housing units than San Francisco County (56.6%). It is possible a result of the rising housing price in the Mission, the housing in the mission is less affordable to low-income and median-income residents in the Mission District, and these residents could only afford to rent a house instead of buying one.

Figure 4 Percentage of Renter or Owner-Occupied Housing Unit in Mission District and San Francisco County



Source: 2013 2017 ACS 5- year estimates, Table B25008

Data Universe: Housing Units. SF County N= 843,955 Mission District N=57,089

Notes: ***Statistically significant difference at 99% confidence level

The z-test shows difference between proportion of owner and renter occupied housing in Mission District and San Francisco County is statistically significant, $z(\text{owner})=17.14 > 2.576$, $z(\text{renter})=14.59 > 2.576$

Income

As figure 5 shows, the lighter the color is, the lower median household income the census tract is. According to 2013-2017 ACS 5- year data, the median household income in the past 12 months of San Francisco is 87,701\$, and the average of median household income of 13 census tract in Mission District is 85,873\$, which is lower than San Francisco but the difference is not significant, indicating the income level of the Mission District is similar to San Francisco, and Mission was not as a poor neighborhood as it used to be (Figure 6).

Figure 5 Median household income in the past 12 months, San Francisco, 2017

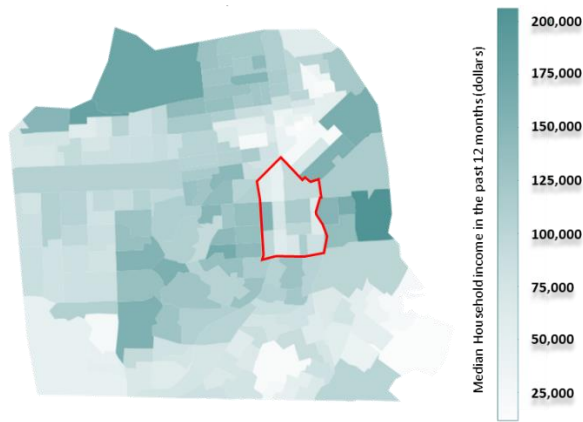
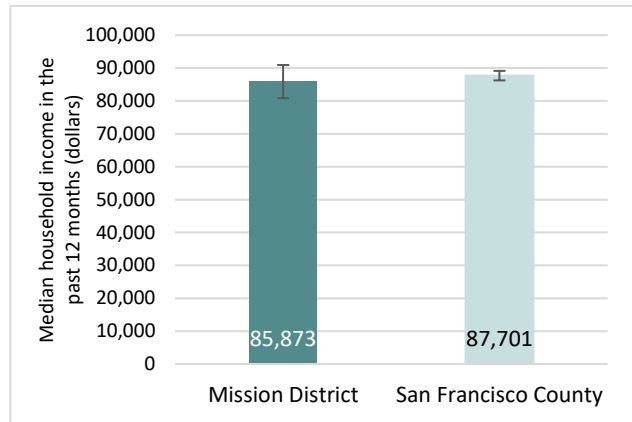


Figure 6 Median household income in the past 12 months, Mission District & San Francisco, 2017



Source: 2013-2017 ACS 5- year estimates, Table B19013

Data Universe: Households.

Notes: In 2017 inflation-adjusted dollars

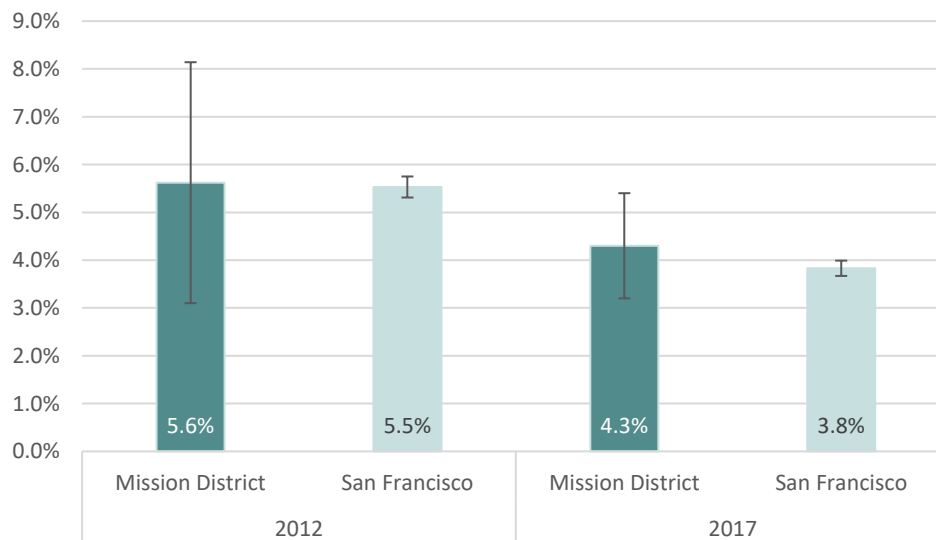
The z-test shows difference between median household income in Mission District and San Francisco County is not statistically significant, $z = 0.57 < 1.645$

The value and MOE of median household income in Mission is using the average value of 13 census tracts in the Mission.

Employment

The Mission District have slightly higher unemployment rate than San Francisco County, and the difference enlarged in 2017. However, both the unemployment rate difference in 2012 and 2017 is not significant, indicating that the Mission residents is not disadvantaged in the employment perspective. (Figure 7)

Figure 7 The Unemployment Rate of Mission District and San Francisco County, 2012 and 2017



Source: 2013-2017 ACS 5- year estimates, Table B23025

Data Universe: Population 16 years and over. 2012: SF County N=1,422,768 Mission District N=44,610.

2017: SF County N= 1,518,942 Mission District N=47,144

Notes: The z-test shows difference between unemployment rate in Mission District and San Francisco County in both 2012 and 2017 is not statistically significant, $z(2012)= 0.059 < 1.645$, $z(2017)= 0.696 < 1.645$

Physical and Mental Health

The adult residents in the Mission District have poor physical and mental health than San Francisco average. As can be seen from Figure 8 and 10, 9.1% of adult residents in the Mission District suffer from poor physical health in the past 30 days, which is 0.2% percent higher than the San Francisco county average. As Figure 9 and 11 shows, 10.9% of adult residents in the Mission District suffer from poor mental health in the past 30 days, which is 1.0% percent higher than the San Francisco county average.

Figure 8 Physical Health by census tract, San Francisco County

Figure 9 Mental Health by census tract, San Francisco County

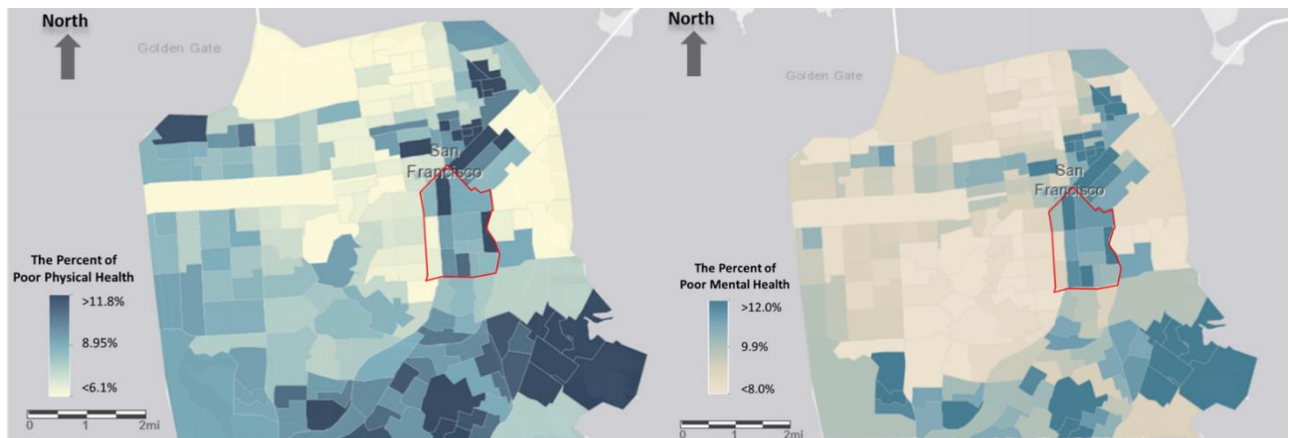
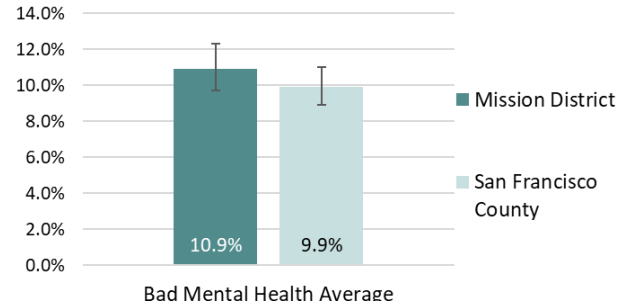
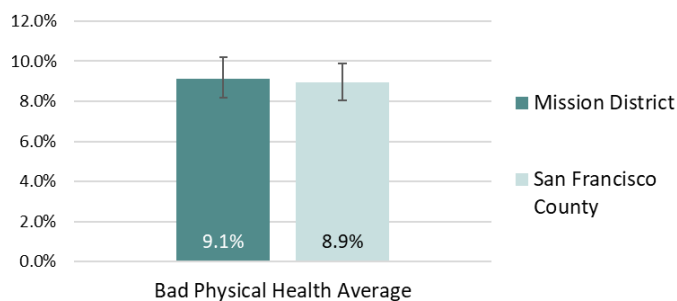


Figure 10 The rate of poor physical health in Mission District and San Francisco County

Figure 11 The rate of poor physical health in Mission District and San Francisco County



Data Source: 500 Cities: Local Data for Better Health (data created in 2016, updated in 2019)

Data Universe: Resident adults aged ≥ 18 years. S F County N= 80054 Mission District N=57298

Notes: The Percent of Poor Physical/Mental Health= Respondents aged ≥ 18 years who report 14 or more days during the past 30 days during which their physical/mental health was not good divided by the count of all respondents

It is not possible to test statistical significance using the existing dataset.

To put in a nutshell, the Mission District is a neighborhood with a large proportion of Hispanic or Latino population and renter housing units, but a similar education and income level, overall slightly poorer mental and physical health outcome compared to San Francisco County.

WHO IS MORE LIKELY TO HAVE POOR HEALTH?

Race

The people of color has significantly higher rate of poor health condition than those who are non-Latino White. As Table 1 shows, of those who are people of color, 27.8% reported in poor health condition, compared to just 18.5% of those who are non-Latino white, which is in consistent with the previous literature that people of color generally have poorer health due to the structure racism and lack of health resources.

Table 1: Percent of respondents' health condition group by races, 2018

	Poor health condition	Good Health condition
People of color	27.8%***	72.2%***
Non-Latino White	18.5%***	81.5%***

Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

Notes: Poor health condition: respondents who answered "Fair" or "Poor" when asked about their general health condition

Good health condition: respondents who answered "Excellent" or "Good" or "Very Good" when asked about their general health condition

Notes: ***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Education Level

The residents who have lower education attainment are more likely to suffer from poor health than those who with bachelor's degree or higher. As table 2 shows, among residents who have lower education attainment, 29.1% of them have poor health, 15.6% higher than those who with bachelor's or higher degree. It is possible that people with higher education have better knowledge of health management and relatively higher income to acquire healthier food.

Table 2: Percent of respondents' health condition group by education attainment, 2018

	Poor health condition	Good Health condition
Lower education attainment	29.1%***	70.9%***
Bachelor's degree or higher	13.5%***	86.5%***v

Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 20,039

Notes: ***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Housing

The Renter housing residents have significantly higher rate of poor health condition than those who own a house. Of those who rent a house, 30.1% reported in poor health condition, compared to just 17.5% of those who own a house (Table 3). The reason why residents who live in the renter house is possibly that they could afford to buy a house. Expensive rent and a sense of insecurity in the renter house may cause them extra stress and led to poor health outcomes.

Table 3: Percent of respondents' health condition group by renter/owner housing units, 2018

	Poor health condition	Good Health condition
Renter Housing	30.1%***	69.9%***
Owner Housing	17.5%***	82.5%***

Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

Notes: ***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Income

The lower income residents have significantly higher rate of poor health condition than high income residents. Of those who are low income, 37.0% reported in good health condition which is 21.2% higher than those who of high income (Table 4). Residents with lower income has less affordability to healthy food and decent housing, which are harmful to their wellbeing.

Table 4: Percent of respondents' health condition group by income, 2018

	Poor health condition	Good Health condition
Low income	37.0%***	63.0%***
High income	15.8%***	84.2%***

Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

Notes: Low income is defined as "0-99% Federal Poverty Level", "100-199% Federal Poverty Level"

High income is defined as "200-299% Federal Poverty Level", "300% Federal Poverty Level and above"

***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Employment Status

Overall, the non-employed residents have significantly poorer health than the employed residents. As table 5 shows, among the non-employed residents, 30.4% of them considered them in poor health, compared to only 14.6% among employed residents. On the one hand, residents who are not employed don't have stable income to afford a decent healthy living. On the other hand, the unemployment would cause pressure and stress on the residents, and further harm their mental health.

Table 5: Percent of respondents' health condition group by employment status, 2018

	Poor health condition	Good Health condition
Non-employed	30.4%***	69.6%***
Employed	14.6%***	85.4%***

Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

Notes: ***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

To conclude, socially disadvantaged residents who are not non-Latino white, have lower education level, live in renter house units, have lower income and are unemployed are more likely to have poor health.

WHAT IS RELEVANT TO RESIDENTS' HEALTH CONDITION

Access to fresh fruit and vegetables

Residents who often find fresh fruit and vegetable in the neighborhood are more likely to have better health condition. As Table 6 shows, of those who often find fruits and vegetables in the neighborhood 79.6% of them reported in good health condition, which is 12.8% more than those who don't usually find fresh fruits and vegetables in the neighborhood. More accessible the fresh fruit and vegetables are, the more likely residents will buy and eat them, which is good for their health.

Table 6: General health condition group by whether respondents often find fresh fruit and vegetable in the neighborhood, 2018

	Poor health condition	Good Health condition
Not often find fresh fruit and vegetable in the neighborhood	33.2%***	66.8%***
Often find fresh fruit and vegetable in the neighborhood	20.4%***	79.6%***

* Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 19,204

***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Physical exercise

The residents who did more exercise are the more likely to be in good health condition. As table 7 shows, of those who are in good health condition, exercised about one more day at least 20 minutes at a time in the past week. In the rational amount, physical exercise could bring benefit to both mental and physical health.

Table 7: Description of times of exercise in the past 7 days group by general health condition,2018

General health condition	Respondent number	Mean of the times respondent exercised	Median of times respondent exercised
Poor	4,753	3.42***	3.00
Good	16,424	4.47***	5.00

* Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21177

***Statistically significant difference at 99% confidence level: the p-value of t-test = 7.131104159259071*10⁻¹²⁴

Neighborhood Relationship

Residents who live in the neighborhoods that are willing to help each other are likely to feel safer, have better mental health and haven't had psychological distress in the past month. As table 8 shows, among

the neighborhoods that are willing to help each other, only 5.8% of the residents don't feel safe in the neighborhood, compared to 27.8% in the neighborhoods that are not willing to help each other.

As table 9 shows, among the neighborhoods that are willing to help each other, only 4.4% of the residents had experienced psychological distress in the past month, compared to 9.9% in the neighborhoods that are not willing to help each other. The neighborhood that is willing to help each other will have better the "street eyes"⁹ which makes residents feel safer and relieve their insecurity stress, benefiting resident's mental health.

Table 8: Percent of whether respondents feel safe group by people in neighborhood whether are willing to help each other, 2018

	Don't feel safe in the neighborhood	Feel safe in the neighborhood
Neighborhood not willing to help	27.8%***	72.2%***
Neighborhood willing to help	5.8%***	94.2%***

* Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00.

Table9: Percent of respondents had psychological distress in the past month group by whether people in the neighborhood are willing to help each other, 2018

	Hasn't had psychological distress in the past month	Has had psychological distress in the past month
Neighborhood not willing to help	90.1%***	9.9%***
Neighborhood willing to help	95.6%***	4.4%***

* Source: 2018 Adult CHIS (California Health Interview Survey) data

Data Universe: California adult respondents (age>18). N= 21,177

***Statistically significant difference at 99% confidence level, the p-value of the Chi-square test is 0.00

CONCLUSION

- The Mission District is not as disadvantaged as it used to be**
 The Mission District was once a poor and disadvantaged neighborhood in the history, but after analyzing the 2017 ACS dataset, the Mission's difference with San Francisco County concerning income, employment and education level is not significant, indicating the economic, employment and education level of Mission is similar to the average level of San Francisco County.
- The Mission has poorer physical and mental health than San Francisco average**
 Although the difference is slight, the data indicates the proportion of bad health, especially the bad mental health in the Mission is higher than San Francisco county. One possible explanation is though the overall situation of the Mission improved, the health outcome is due to a long-time cumulative effect and some health determinants such as structural racism is hard to change in short time.
- Socially disadvantaged adult residents are more likely to have poor health**

⁹ Jan Jacobs (1961) "The Uses of Sidewalks: Safety" from The Death and Life of Great American Cities.

After analyzing the California Health Interview Survey data, the result shows that residents who are people of color, unemployed, live in renter-owned houses, and with lower education, income, are more likely to have poor health. A possible explanation is that these disadvantaged residents have poor exercise to various health resources including health clinics, parks, healthy food retails, etc. Furthermore, some residents may suffer from discrimination which may lead to poor mental health.

- **Access to fresh fruit, higher frequency of physical exercise and better neighborhood relationship may contribute to better health**

Since fresh fruits and vegetables, and more exercise may contribute positively to our health, residents who have better access to fruit and vegetables in the neighborhood, and exercise more are likely to have better general health condition. Residents who live in the neighborhood that is willing to help each other are may feel safer in the neighborhood and less likely to experience mental distress.

RECOMMENDATION

- **Planners and policy makers should focus more the health of socially disadvantaged group of residents**

Since the socially disadvantaged group of residents are more likely to have poor health, in order to address health equity, it is recommended that the planners consider the health need of disadvantaged residents as priority.

- **Plan more accessible fresh fruit and vegetable retails as well as exercise space for disadvantaged community**

More accessible fresh fruit and vegetable retails as well as exercise space would encourage residents eat more fresh fruit and do more exercise, which are beneficial for residents' health, especially those disadvantaged residents who tend to have less resources.

- **Plan and design more public space in the community**

Nice and neat public space including sidewalks in the community would encourage nearby residents to come out, chat and do exercise together which is beneficial for harmonious neighborhood relationship and thus makes residents live in the neighborhood feel safer and less stressed.

LIMITATION

- **The research on health determinants is based on California data, and might not be perfectly suitable for Mission District**

Public CHIS data is a disaggregated data without giving the census tract level information of each respondents. Therefore, the conclusion of health determinant is based on California State scale but not Mission District scale.

- **Physical environment could affect residents' health but hasn't been considered in this study**

The physical environment such as parks, air quality could affect resident's health as well, but this study didn't take the physical environment variable into consideration. The further research study could consider take physical environment variables into account.