

## Abstract

Understanding social determinants of health (SDOH) given the impact it has on health outcomes in modern healthcare is crucial in understanding the Kings County community. In this research, a mixed-methods approach combining prospective surveys with retrospective epidemiological analysis of Kings County was utilized. A 10-question survey was administered to 168 patients at One Brooklyn Health (OBH) and covered demographic, economic, insurance coverage, income levels, education levels, food insecurity, policy utilization, household compositions, and living conditions. By addressing these factors, the aim of this study is to promote health equity, eliminate barriers, improve accessibility, and shift towards preventive care. Analyzing the SDOH between Interfaith and Brookdale hospital sites of OBH revealed notable findings. While age distributions and educational backgrounds were similar, differences in income levels highlighted potential economic disparities impacting health outcomes. Both sites exhibited a high proportion of African American patients, surpassing Kings County's demographic representation. This emphasizes the importance of addressing economic disparities and understanding the nuanced impact of social determinants on health outcomes in the Kings County region.

## Background

In the Kings County region and the evolving landscape of healthcare, understanding the recognition of SDOH has become instrumental in comprehending health outcomes. The purpose of this study was to highlight the internal and external factors on the health trajectories of Kings County individuals, Various SDOH within Kings County and the OBH hospitals were examined to recognize the dynamic nature of the community. By embracing this understanding, it will gear towards health equity, dismantling barriers, enhancing accessibility, and fostering a paradigm shift towards preventive care over reactive treatment. Through these efforts, the onset of oral and systemic diseases can be prevented and a foundation for a more just and equitable healthcare system can be established.

## Study Objectives and Purpose

The objective of the study is to provide an understanding of the factors influencing patients' health outcomes and patient's access to care from medical facilities through focusing on demographics, insurance coverage, income level, education levels, food insecurity, systematic policy utilization, household compositions, and living conditions in the Kings County community.

## Study Design

A mixed-methods approach, combining prospective survey data collection with retrospective analysis of epidemiological content spanning 15 years were employed in this study. A 10-question survey was administered to a cohort of 168 patients of OBH in the Kings County region aimed at elucidating different SDOH factors. Concurrently, a comprehensive review of Epidemiological data was conducted, drawing upon sources including County Health Ranking System, Feeding America, and New York City Community Health Profiles. This multifaceted approach sought to provide a holistic understanding of the social determinants of health within the Kings County, aimed at promoting health equity and the wellbeing in the community.

## Results

Measure	County Health Ranking System	Brookdale and Interfaith
<b>Population</b>	2,588,694.8	
% African American	31.0	72.6
% American Indian/Alaskan Native	0.9	0.6
% Asian	12.0	5.4
% Hispanic	19.0	18.5
% Native Hawaiian/Other Pacific Islander	0.1	4.8
% Non-Hispanic White	36.0	2.4
<b>Median income</b>	\$50,600	
	10 yr avg. rank out of 62	
<b>Health Outcomes</b>		
Length of life & poor physical/mental health days & low birthweight	33	
<b>Health Factors</b>		
Tobacco/alcohol/drug use & diet/exercise/sexual activity	56	
<b>Length of Life</b>	15	
<b>Quality of Life</b>		
Physical & mental health days & low birthweight	49	
<b>Clinical Care</b>		
Access to care & quality of care	57	
<b>Social &amp; Economic</b>		
Education & employment & income & social support & community safety	59	
<b>Physical Environment</b>		
Air/water quality & housing/transit	40	
<b>Uninsured</b>	12	
	Ratio of Individuals to provider	
<b>Population/PCP (Kings County)</b>	1396:1	
<b>Dentist/population (Kings County)</b>	1575:1	
	Percentage	
<b>1 Parent Household</b>	37%	
<b>Children in Poverty</b>	30%	
<b>Eligible for Free Lunch</b>	70%	
<b>Food Insecure</b>	18%	
<b>Supplemental Nutrition Assistance Program (SNAP)</b>	24%	52.44%
<b>Women, Infant &amp; Children (WIC)</b>	50.30%	
<b>Children in homes with cockroaches (age 1-13)</b>	48%	
<b>Children in homes with mice (age 1-13)</b>	31%	

Fig 1. Mixed epidemiological content from County Health Ranking System, Feeding America, and New York City Community health profiles.

Measure	Brookdale	Interfaith
<b>Level of Education</b>		
Associate Degree	20	14
Bachelor Degree	9	16
High School Diploma/GED	36	30
Master's Degree	3	0
Trade School Certification	9	9
Other	10	9
<b>Income</b>		
Less than \$20,00	36	22
\$20,000 - \$49,999	34	41
\$50,000 - \$79,999	11	15
Above \$80,000	6	0
<b>Housing Situation</b>		
Own	13	5
Rent	69	70
Other	5	3
<b>People in Household</b>		
0 - 1	2	1
2 - 3	29	27
4 - 5	37	32
6 - 9	9	18
<b>Dependents in Household</b>		
1 - 2	54	34
3 - 4	26	33
Greater than 4	1	10
None	6	1
<b>Health Insurance</b>		
Yes	82	74
No	5	4
<b>Missed School</b>		
Yes	32	18
No	55	60
<b>Utilizes SNAP benefits</b>		
Yes	46	43
No	40	35
<b>Age of Child First Visit</b>	4.44	3.68
<b>Age of Child at Visit Today</b>	8.21	9.21

Fig 2. Data from 168 completed 10-question survey (Brookdale and Interfaith sites).

Variable	Chi Square Value	P-Value
Level of Education	6.144	0.292
Income	10.187	0.017
Housing Situation	3.582	0.167
People in Household	5.403	0.145
Dependents	15.867	0.001
Health Insurance	0.031	0.861
Missed School	3.657	0.056
Utilizes SNAP Benefits	0.946	0.623

Fig 3. Chi Squared Value and the P-Value of data collected between the two hospitals above.

## Discussion

Noteworthy findings were revealed following the study of SDH between the two sites, Interfaith and Brookdale. Significant differences were observed in the age distributions of children, with those at Interfaith being, on average, one year younger than their counterparts at Brookdale. Ethnicity-wise, African American was the predominant category at both sites, showcasing a consistent demographic pattern. The two hospital sites exhibited a significantly higher proportion of African American patients compared to the demographic representation reported for the Kings County Region. Educational backgrounds did not differ significantly between the two sites, indicating similar educational opportunities. However, a notable dissimilarity emerged in reported income levels, with a higher proportion of Brookdale patients reporting incomes exceeding \$80,000 compare to none at Interfaith, highlighting potential economic disparities that could impact health outcomes. In terms of the median income range it is fairly consistent with the income range reported by The County Health Ranking System. Furthermore, housing arrangements and household size exhibited no significant difference, the number of dependents at Interfaith surpassed expectations of an average household size. Despite the disparities, both sites showed high rates of health insurance coverage. Additionally, no variations were observed in absence from school due to dental pain, SNAP participation, or housing situation between the two sites. However, utilization of SNAP benefits among the hospital population were higher compared to what is reported in the County Health Rankings System.

## Conclusions

In conclusion, both similarities and disparities in Brookdale and Interfaith patient populations were highlighted. While demographic patterns such as age and predominant ethnicity remain consistent, significant differences in reported income levels suggest potential economic disparities that could impact health outcomes. The observed higher utilization of SNAP benefits among hospital populations emphasizes the need for a nuanced understanding of socioeconomic factors affecting healthcare access. Despite these variations, both sites exhibit high rates of health insurance coverage, indicating a potential mitigating factor of these disparities. Future efforts should focus on targeted interventions addressing economic disparities to improve overall health equity in these communities. Further research and discussion with local stakeholders may provide additional insights and produce strategies to reduce health inequities for the people of Kings County.

## References:



Survey

References