

Housing and Health: How is Research on Public Housing Failing Residents?

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Abstract

This paper examines research design plans that establish deteriorated health as an outcome of public housing residence. Previous research conducted with varying fields has led to the widespread stigmatization of public housing as an area of desperation and danger. However, new experimentation is leading researchers to accept public housing as a stable environment. Evidence from this study finds that research conclusions on public housing and deteriorated health are either inconsistent or unreliable. This is because much of the resident data on public housing and health is not interlinked. Therefore, current research design plans for housing and health lack appropriate data, factor analysis and knowledge of resident behavior. Thus, research designs must be reformed so they accurately describe resident experience and strengthen government course of action. This qualitative study will review research on housing and health for a 20 year period from 2003-2023 to provide usable research design methods that are progressive to scientists' study of housing and health.

Chapter 1: Introduction

Research on public housing and health has led to widespread stigmatization of public housing communities and residents in New York City. The issue with this information is research models currently lack adequate data on health, housing and factors which connect the two. Data results which associate public housing and health are not interlinked and factors either overlapping or separate from the issue go unaccounted for. Weak research designs provide inconsistent and inconclusive information and lead to government funds being spent unnecessarily on matters impertinent to health issues faced by public housing communities. Therefore, specific needs of individual communities go unmet.

The solution to this issue is to create strong design plans across various fields of study which link information for housing and health, taking all factors into account before making definitive conclusions. Moreover, researchers should work alongside community health programs to gain in depth knowledge on the current conditions of housing and health instead of relying on housing data systems alone. Multifaceted research designs offer communities personalized viewpoints which can lead to solutions that are specific to the problems public housing communities face individually. This will ensure that housing funds are provided on a

case by case basis and with laws designed to fit precisely with resident needs. However, weak research design plans mean scientists are currently failing public housing residents.

Background

The history of public housing is well documented. Edward Goetz a renowned author on housing policy and low income residents and author of urban and regional affairs in Minnesota in his book *New Deal Ruins: race, economic justice, and public housing policy* explained public housing as something coming out of the Progressive movement and the Modern Housing initiative (Goetz, E.G. 2013). Each of these was a way to clear slum living of the past which was determined to negatively impact the health and wellbeing of residents who had lived in private housing neighborhoods (Goetz, E.G. 2013). High rise buildings consisting of over 100 apartments were erected in their demolition (Goetz, E.G. 2013). These buildings would provide affordable and decent living for the millions of families displaced by slum demolition (Goetz, E.G. 2013). Moreover, these complexes would solve the issue of poor neighborhood conditions and allow the residents to have greater control over their actions and choices (Goetz, E.G. 2013).

However, in the following decades since their erection media coverage and research has brought about widespread stigmatization of public housing conditions and residents (Evans, G. W., Wells, N. M., & Moch, A., 2003). Yet the waitlist for public housing is currently at a 10 year standby for future occupation thus, people still want to live in housing projects (Goetz, E.G. 2013). Furthermore, residents who cannot afford or are often discriminated against within the private housing market are funneled through these low income housing complexes without the opportunity to choose optimal neighborhood conditions (Goetz, E.G. 2013). The result of this

are policies which focus on improving external neighborhood factors which affect health, not on improving the internal housing conditions of public housing apartments. Today many public housing buildings are still being torn down and replaced with affordable housing units. Goetz (2013) believes public housing is the most affordable and stable form of housing for low income families because it offers opportunities for residents to build cooperative communities which support daily life and form trustworthy environments.

Chapter 2: Literature Review

There is an exorbitant amount of literature linking public housing issues to deteriorated mental and physical health conditions. More recently scholars are finding the connection between public housing as a stable environment for improved health. However, the issue at point is whether the conclusions drawn in these studies account for the stereotypical relationship of housing and health as either a correlation or determinant. The question becomes more important when we consider the statistical information from federal government agencies that disputes the facts/conclusions of some modern studies. This qualitative study will first measure the reliability of research on public housing and deteriorated health. The objective of this review is to discuss issues within research design plans for housing and health conducted over a 20 year period between 2003-2023. Finally, we will recommend research model revisions and future observations for public housing and health.

One of the more recent studies on public housing and health was conducted by Andrew Fenelon a sociologist and demographer who researches social and locational population health for the U.S. He is also the assistant professor for the department of sociology and criminology with Penn State. Fenelon and collaborators formed a quantitative study which focuses on external neighborhood factors that lead to diabetes caused by mental distress (Fenelon et al., 2017). Information from the National Health Interview Survey and HUD data on health status, gender, housing type, and self-reported mental distress were collected and examined. This is a

trusted study that shows when housing and neighborhoods are improved health outcomes improve as well (Fenelon et al., 2017).

Similarly, Tama Leventhal, a doctor of developmental psychology and professor of child study and human development at Tufts University conducted a study which was published in the American Journal of Public Health. This journal is a reliable source that has published on the effects of low income housing plans within America since its 1951 article on the Hygiene of Housing (Senn 1951). Leventhal et al. (2003) data is collected through the Moving To Opportunity trial program created by the government which collects data on families in public housing over a 3 year testing period. The study determines that low income families have little choice of the type of neighborhood they move to and are frequently filtered to poor quality environments. Therefore, public housing residents who experience crime, unemployment, and lack of community support have an increased likelihood of encountering physical and mental health ailments.

Leventhal et al.'s (2003) conclusions are supported by Helms et al. (2017). This quantitative study collected data through random selection of information connected to adults across various housing types between 2006 and 2012. The study applied factors of race, sex, housing type, health, and employment status (Helms et al., 2017). This seems to be the most comprehensive research design and was conducted on behalf of HUD who owns over 300 housing projects in New York. These details were formed to measure conditions and successes of housing in order to expedite needed funds where necessary. Much of the research is centered around internal and external living conditions like infestation, poor education, and evictions as proof of causation of deteriorated residential health. However, the conclusions of this study may

not be trustworthy since the findings are biased toward resident behavioral habits which may lead to health issues rather than internal issues within the housing department.

Likewise a study by Brian Yim et al. (2019) affiliates of the New York City Department of Health and Mental Hygiene indicate residents who live in public housing suffer from preventable hospitalization. These are conditions requiring ambulatory care which lead to hospitalization that can be prevented through early intervention (Yim et al., 2019). This study linked data from New York City hospitals statewide Planning and Research Cooperative System (SPARCS) to New York City Housing Authority (NYCHA) 2015 resident data book, and American Community Survey for approximations of a 5 year period (Yim et al., 2019). The measurements of the study included information on age, sex, race/ethnicity, physician, diagnoses, income, payment type and neighborhood demographics which include buildings and facilities (Yim et al., 2019). The Agency for Healthcare Research and Quality (AHRQ) created the Prevention Quality Indicators measuring chronic and acute conditions which the study is modeled after (Yim et al., 2019). Therefore, the information within the study is trustworthy.

Comparatively a study by Sonik and associates explores the link between internal housing violations and eviction as an indication of mental stressors which cause ailment (Sonik et al., 2022). Rajan Sonik is the director of research for the Institute for Health Equity at AltaMed Health Services. He investigates social issues which affect the nature or outcome of health. Data collected from this study comes from NYC Open data systems therefore, all numerical information has been cross referenced for accuracy. Facts were also gathered from the Center of Disease Control and Prevention and the Social Vulnerability Index (SVI) used to calculate varying factors of environment to determine vulnerability ranking (Sonik et al., 2022).

This quantitative study shows housing instability stemming from eviction increases the likelihood of psychological disorder and poor physical health (Sonik et al., 2022).

The conclusion is that residents of public housing face an increased risk of ailment because of exposure to poor living environments and eviction as retaliation for complaints (Sonik et al., 2022). This is supported by Fenelon et al. (2017) which agrees that low income families like those in public housing experience stress which leads to poor health due to the frequency they face eviction and homelessness. However, Sonik et al., (2022) study links poor living conditions but fails to provide adequate statistical evidence to support its findings on evictions.

Likewise, Galea, a doctor and Harvard graduate who studied quantitative methods examined the correlation between a poor built environment and depression (Galea et al., 2005). The definition for poor quality as outlined in the study refers to associations with daily stressors which can result in depression (Galea et al., 2005). Statistics of the experiment were used to determine the likelihood of depression between six months and a lifetime (Galea et al., 2005). Galea et al. (2005) found an increased amount of overall residents in public housing felt depressed at least 1 time in the last 6 months due to their environment. The number increases among members of poor neighborhoods when compared to residents of better built environments (Galea et al. 2005). However, the parameters of this experiment are too constrained. For that reason the research design plan focusing on poor housing as a cause of diminished health needs reformation.

For example Beck, a sociologist who has written a number of articles on urban environments writes about the relationship between public housing environmental factors and mental health. Public housing projects are artificial landscapes constructed with community

parks and gardens as a way to build community involvement (Beck 2018). However, many open spaces within public housing complexes are sources of social decay, and disorder which encourage feelings of isolation (Beck 2018). We can gather that community involvement needs to be influenced because it allows a feeling of participation where members can work together to advocate for services which the community does not offer (Beck 2018). Moreover, Beck's (2018) research suggests the organization of public housing is dependent on the size and density of the building because large complexes create areas of high fear which lead to distrust, while smaller, less dense buildings indicate areas of built trust. This study is reliable because it is multifaceted and provides definitive links to internal/external environmental issues like crime, poor environment, building size, floor level, and open spaces as contributors to feelings of isolation which can lead to psychological distress (Beck 2018).

Similarly, there is a more recent study which compares internal stressors like eviction to deteriorated health and has a reliable research design plan. Sungwoo Lim the senior director of research at the Bureau of Epidemiology Services with the Department of Health and Mental Hygiene is a reputable author whose work has been cited over 1,000 times. Lim et al. (2020) conducted a qualitative study on how public housing, when stable, can be an environment that prevents unhealthy outcomes like diabetes. Data was included from the World Trade Center Health Registry (2023) which conducts a wave of health surveys after the 9/11 attacks in New York City. This registry measures youth and adult health which includes depression, disease and difficulties following milestone events over the last 15 years (World Trade Center Health Registry 2023). Researchers believe identifying factors for diabetic diagnosis include stressors like post traumatic stress disorder, which can be linked to issues of housing instability like evictions (Lim et al., 2020). Although this study contains significant information from health

professionals who research stress as an indicator for diabetic outcome, the relationship between housing and diabetic outcome is not exclusive. Therefore, the conclusions drawn within the study are not completely reliable because much of the study includes health information that is still being investigated.

Contrarily, the United States Department of Housing and Urban Development (HUD) does have a study listing length of stay for assisted housing (public housing, section 8 etc.) residents which is readily available (McClure 2018). This quantitative study was conducted for the period between 2000 to 2015 (McClure 2018). The research method uses survival analysis which observes household characteristics, housing market vacancy, population size, and incidence of poverty which influences the length of stay (McClure 2018). Accordingly, findings show adults who leave public housing are younger, better educated and leave due to eviction for noncompliance, loss of income, or receive better income which allows for other forms of housing (McClure 2018). Consequently, this inquiry is completely reliable because it provides an indepth look at movements of public housing residents and multiple factors which support resident behaviors outside of eviction.

Likewise, Ingrid Ellen, a professor of urban policy and planning at NYU measured the relation between public housing transformed into low income housing and health (Ellen et al., 2020). To do this medicaid electronic data was compared against welfare details (Ellen et al., 2020). The study shows residents of public housing face an unequal burden of health risks due to poor housing qualities (Ellen et al., 2020). Lack of adequate plumbing, elevator usage, heat and hot water are a few factors that affect the psychological strain residents experience (Ellen et al., 2020). The fact is these buildings need repair and attempts to reconstruct public housing resulted in the creation of affordable apartments. Of the 325 public housing complexes in New York there

is an accumulation of \$31.8 billion for needed repairs (Ferre-Sadurni 2018). Nearly two million people are in need of housing repairs to meet a decent standard of living (Ferre-Sadurni 2018). However, the issue within this research design is the inability to measure comparable data. The study is biased because it specifically focuses on resident stress due to lack of repairs but has no comparative data on improved/deteriorated resident health when repairs are made. Thus, no one conclusion can be drawn from this inference.

In conclusion, when considering all the above studies we can see that public housing residents face a significant amount of hardship when dealing with health related issues (Hernández et al., 2019). Unresolved issues within the public housing system provide little faith in its future moving forward (Hernández et al, 2019). Current research design plans do not focus on housing operations and the diverse interdependent topics of housing and health with regard to public housing residents (Hernández et al., 2019). Most of the research on public housing is either too narrow, broad or lacking adequate resident participation (Helms et al., 2017). Identifying and focusing on internal and external elements which involve these 4 factors (stability, affordability, quality and safety in neighborhoods) and how they affect health will lead to improvement which is also true for research characteristics not thought of yet (Hernández et al., 2019). Hernandez et al.'s (2019) resolution is that researchers focusing on just one issue must consider them as co-dependent to better express a correlation and determine the causal relationship between poor health and public housing. Moreover, many health conditions which can be explained by these factors go unresearched (Hernández et al., 2019). Design plans must examine the structural inequality which diminishes quality of life for vulnerable groups that includes all race and housing history (Hernández et al., 2019). Therefore, identifying factors within a broad range of issues inclusive of all demographics can yield more concrete findings

(Hernández et al., 2019). However, the job is not done at research, these issues must be addressed by the political and financial stakeholders of public housing in order to create functional solutions to improve health in public housing where necessary (Hernández et al., 2019).

Chapter 3: Methods

This qualitative study will review research on housing and health for a 20 year period from 2003 to 2023. This study will outline researchers' viewpoints on New York City Public housing and negative health outcomes. The reasoning for this inquiry is to determine whether researchers are providing correlative or determinant information on negative health and its linkage to public housing environments. The goal of this qualitative review will help to better understand health in public housing, reform research designs, and determine future direction for research plans on public housing and health. The study will conclude with improvements researchers can make to design plans in order to provide more informed results and usable solutions to the issue.

It was very hard to find materials on New York City public housing and health because most of the studies are done on public housing within and outside of the United States. Furthermore, the topic is included over many fields of study. However, most articles are linked to public health, sociology, environmental and occupational health categories. This secondary study was conducted using materials from the Purchase Library search and Google Scholar. Initial inquiry search terms included public housing health, poor mental health in public housing and public housing defined as assisted living environments. Secondary search terms include issues with research on public housing and residential satisfaction concepts. Public housing yielded over 36,020 results which were narrowed down using peer reviewed articles and included two trustworthy journals of Public Health and American Journal of Preventive Medicine yielding 158 results. Materials were sorted based on use of search criteria including public housing, disadvantage, mental health, psychological distress, low income and New York producing 10

studies closely related to the research question. Google Scholarly articles follow the same path of research and discovery and were entered into Purchase Library search to affirm peer reviewed status. All text was reviewed for relevance and reliability. Articles were sorted into groups of health issues indicated or no indication of health issues. Authors were researched for areas of study, expertise and material reliability. Publishing companies were researched for scientific journal ranking and authenticity. Supplementary works cited in review were examined for relevant content and reliability. Document sourcing included author background, thesis statement, findings etc. Public data was gathered for accuracy of research results. Material study terms include residential concepts housing, satisfaction including housing needs, housing deficit and psychological construct theory, multilevel hierarchical models, Kessler-6 score, and hierarchical regression model included in research design plans. The primary variables of study include race/ethnicity, income, sex, housing assistance status, residential address, employment, and health status.

There is a risk of bias in this study because the search criteria was limited to articles with determinant results over those which merely make correlations. Additionally, research was also limited to studies based on negative health outcomes over those which seek positive health results. Moreover, the issue with the study area is that data is too comprehensive for one person to collect, therefore, research should be conducted with bigger groups. Furthermore, government source data is not interlinked, therefore statistical information on public housing and health are in conflict.

The findings of this qualitative study show that researchers are failing to clearly identify factors which lead to poor health outcomes for public housing residents. Understandably, there is an issue with public housing and health however, researchers have not provided solid proof of

its cause and the government is not clear on exactly what the issue or solution may be. Design plans must be inclusive of high quality data on resident history, community support programs and policies which affect the current state of life in public housing (Hernández et al., 2019). Researchers can yield more informed results when design plans are multifaceted, researchers work in larger groups across various fields and information systems are linked to housing. Moreover, studies should collect data with the premise of providing a causal relationship between housing and health instead of focusing on connections. Factors of consideration for public housing and health studies should include stability, affordability, quality and safety of neighborhoods in order to generate functional solutions which improve health (Hernández et al., 2019). Additionally, Mohit et al. (2014) adds purposive evaluation focuses on questions inclusive of elements in publicly funded programs, social environment and demographic characteristics. Studies done on public housing and health must be on an individual needs basis rather than collective because this leads to results which directly impact policies on specific community needs (Mohit et al. 2014). Comprehensive studies using this design plan should be on the ground or in person and work alongside community programs for direct statistical info and viewpoints. Utilizing this multifaceted design approach guides future research to questions which have not been thought of yet.

Chapter 4: Findings

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Introduction:

Based on the studies mentioned you can see that comprehensive and multifaceted research design plans work well. However, overly broad or narrow design plans only hinder researchers' conclusions and therefore don't work. To correct this researchers must first include multifaceted design plans in order to provide determinant findings for deteriorated health in public housing. Study investigation methods must link specific factors which contribute to this issue. Secondly, comprehensive research across varying fields of study is recommended because this will yield results which show the current status of public housing and health. Lastly, observing where this leads future research so that design plans on public housing and health don't fail residents.

Current State: Why broad, constrained and inadequate research designs don't work?

For example, Fenelon et al.'s (2017) and Helm et al.'s (2017) studies form conclusions about information that is not linked to resident health data. The facts collected in both studies came from the National Health Interview Survey (NHIS) and HUD records. Furthermore, both data sources depend upon resident self-reporting. In Fenelon et al. (2017) study with a data period of 1999 to 2012 the numbers for private housing and voucher users were higher when asked about experience with mental distress. Comparably, in Helms et al. (2017) study NHIS and HUD information was measured for a period from 2006 to 2012. When asked about experience with 10 health conditions public housing residents reported worse health than those of low income renters and the overall public (Helms et al., 2017). Public housing residents also experience higher psychological distress than unassisted renters but report having more access and utilization of health and public insurance than low income renters (Helms et al., 2017). The issue with self-reporting is public housing residents are 50% less likely to report psychological discomfort than people who have not yet entered public housing (Fenelon et al., 2017). Both studies have data from the same sources yet conflicting opinions.

Figure 1

Research results Fenelon et al. 2017 pg. 574

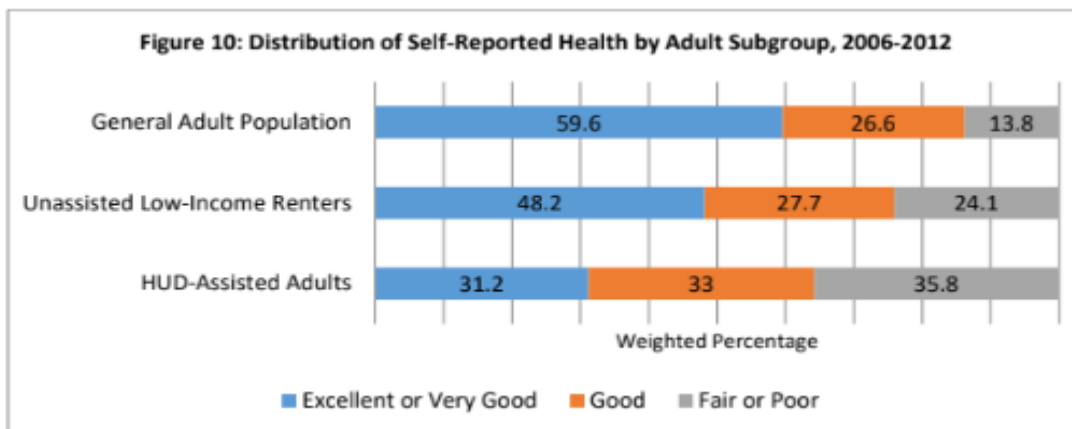
TABLE 1—Descriptive Characteristics by Housing Assistance Timing and Program Category: Linked NHIS–HUD Data, United States, 1999–2012

Characteristic	Public Housing		Housing Choice Vouchers		Multifamily Housing	
	Current ^a	Future ^b	Current ^a	Future ^b	Current ^a	Future ^b
No.	2065	1105	3822	1792	2808	1194
HUD-assisted, y, mean ±SD	3.1 ±0.5	...	3.1 ±0.4	...	3.1 ±0.5	...
Age, y, mean ±SD	49.1 ±1.2***	43.4 ±1.0	42.5 ±0.4**	39.2 ±0.5	52.5 ±1.3***	47.5 ±1.0
Women, % (SE)	72.3 (1.5)	71.1 (1.7)	78.8 (0.9)	76.4 (1.3)	73.4 (1.4)	70.4 (1.6)
Household size, mean ±SD	2.8 ±1.6	2.9 ±1.8	3.0 ±1.5	3.0 ±1.7	2.9 ±1.6	2.7 ±1.6
Children present, % (SE)	48.9 (2.7)	47.4 (2.5)	55.4 (1.1)*	61.6 (1.5)	33.2 (2.6)	37.5 (2.1)
Race/ethnicity, % (SE)						
Non-Hispanic White	34.0 (3.2)	34.0 (2.4)	37.5 (1.4)	37.7 (1.6)	50.3 (2.8)	55.9 (2.4)
Non-Hispanic Black	39.3 (3.3)	42.1 (2.5)	37.9 (1.2)	38.5 (1.6)	27.9 (2.4)	26.3 (2.0)
Non-Hispanic other	5.6 (1.9)	3.8 (0.8)	4.9 (0.6)	4.4 (0.7)	5.4 (0.8)	4.3 (0.8)
Hispanic	21.1 (2.3)	20.1 (2.3)	19.7 (0.9)	19.4 (1.3)	16.4 (1.6)	13.5 (1.7)
Education, % (SE)						
< high school	48.8 (2.6)	39.3 (1.7)	32.5 (0.9)	32.6 (1.3)	38.7 (1.5)	36.7 (1.7)
High school	29.9 (1.4)	33.7 (1.6)	29.8 (0.9)	28.5 (1.3)	31.7 (1.3)	32.0 (1.7)
> high school	29.2 (1.4)	27.0 (1.7)	37.7 (1.0)	38.8 (1.6)	29.5 (1.3)	31.3 (1.6)
Poverty status, % of FPL (SE)	**		**		**	
< 50	23.8 (1.7)	19.9 (1.5)	23.4 (0.8)	22.6 (1.2)	22.3 (1.7)	17.4 (1.4)
50–99	41.4 (1.6)	34.9 (1.7)	42.5 (0.9)	35.4 (1.4)	42.0 (1.2)	29.5 (1.2)
100–199	26.5 (1.3)	30.3 (1.7)	28.1 (0.9)	29.7 (1.4)	29.9 (1.3)	37.9 (1.7)
≥ 200	8.3 (0.7)	14.9 (1.5)	6.8 (0.5)	12.2 (1.6)	5.8 (0.6)	15.1 (1.3)
Employment status, % (SE)	*		*		*	
Employed	28.9 (1.5)	36.2 (1.8)	35.4 (0.9)	39.9 (1.5)	22.7 (1.4)	31.9 (1.9)
Unemployed	8.5 (0.9)	8.1 (1.0)	11.5 (0.7)	10.6 (0.7)	8.5 (1.0)	9.3 (1.2)
Not in labor force	61.2 (1.9)	54.4 (1.9)	51.1 (1.0)	47.9 (1.5)	66.5 (2.0)	56.2 (1.9)
Missing	1.4 (0.4)	1.1 (0.4)	1.9 (0.2)	1.6 (0.4)	2.3 (0.4)	2.5 (0.5)
Insurance status, % (SE)	**		**		**	
Private insurance	9.0 (0.9)	17.7 (1.5)	11.4 (0.6)	13.3 (1.1)	5.7 (0.6)	14.5 (1.3)
Public insurance	73.1 (1.5)	62.5 (2.8)	70.0 (1.0)	63.8 (1.5)	80.5 (1.3)	65.6 (1.9)
No insurance	17.7 (1.3)	19.4 (1.6)	18.4 (0.8)	22.9 (1.3)	13.5 (1.2)	20.0 (1.6)
Received SNAP or WIC, % (SE)	56.8 (2.2)**	45.9 (2.8)	61.3 (1.0)**	53.9 (1.5)	52.3 (2.0)**	41.9 (2.1)
Health status, ^c % (SE)						
Fair or poor	35.2 (1.3)	37.6 (1.8)	36.0 (1.0)	34.0 (1.3)	32.1 (1.2)	34.4 (1.7)
Good, very good, or excellent	64.8 (1.3)	62.4 (1.8)	64.0 (1.0)	66.0 (1.3)	67.9 (1.2)	65.6 (1.7)
Psychological distress, ^d % (SE)	*		*		*	
Serious distress	10.1 (0.9)	13.8 (1.5)	12.8 (0.8)	11.7 (1.0)	12.2 (0.9)	11.1 (1.2)
Not serious distress	89.9 (0.9)	86.2 (1.5)	87.2 (0.8)	88.3 (1.0)	87.8 (0.9)	88.9 (1.2)
Census tract characteristics, % (SE)						
Neighborhood disadvantage	1.4 (0.1)	1.1 (0.1)	0.5 (0.0)**	0.7 (0.0)	0.8 (0.1)**	0.5 (0.1)
Neighborhood instability	-0.2 (0.1)*	0.1 (0.1)	-0.1 (0.0)*	0.0 (0.0)	-0.1 (0.1)	-0.1 (0.0)

Continued

Figure 2

Results for HUD housing health Helms 2017 pg. 13



There is statistical evidence to support both approaches but there is no statistical information that self-reported improved health is caused by improved internal/external environmental factors because housing data is not linked to medical records. Thus, the increase/decrease in self-reported health could be due to any number of factors which are not considered within the research design. One such factor is lower levels of residents with pre-existing conditions which are either biological or related to previous areas of residence. Consequently, conflicting conclusions are drawn around a lack of data on resident behavior.

Moreover, the duration of time covered in both studies is too broad. Fenelon covers a 13 year period while Helm's covers a 6 year period. If they chose to focus on a 1 to 3 year period the results would have been more consistent. According to the National Health Interview Survey (2013) during 2012 public housing members reported better health and less mental distress than future public housing members.

This information is similar to Leventhal et al.'s (2003) study. 550 families of poor housing in high poverty environments are moved to areas of advantaged neighborhoods and surveyed after a 3 year period through HUD's 1994 Moving to Opportunity trial (Leventhal et al., 2003). The result of the study found residents who moved to advantaged neighborhoods were 21% to 33% less likely to report mental disorders and 25% to 49% more satisfied with their life outcomes (Leventhal et al., 2003). In this case Leventhal et. al. utilized comparative evaluation (Mohit et al., 2014) of neighborhood environments. Leventhal et al. (2003) also confirms Fenelon et al.'s hypothesis regarding a stable housing environment and good health. However, Leventhal et al. (2003) formed a different conclusion.

These studies are contradictory because they lack data on family income, welfare statuses or employment demographics (Leventhal et al., 2003). For instance, Leventhal et al.'s (2003)

findings did not include employment history but focused on unemployment. However, employment status is a stress effective factor which could increase/decrease numerical values for good/ bad health and therefore serve as proof of the causal relationship between public housing environment and deteriorated/better health outcomes. These studies would likely have come to different conclusions if they focused on specific resident behaviors which reflect current conditions. Still researchers failed to acquire their link to relevant health information. Accordingly, the design plan does not work because the conclusions drawn can present bias toward public housing residents who experience/don't experience these factors but are not accounted for.

Additionally, government services which provide statistics and demographics on public housing residents are not interlinked. Therefore, focusing on any one data pool means neglecting findings in other areas. Thus, future research is corrupted because current findings stigmatize public housing as an area of poor health. This is evident in a more recent study conducted by Yim et al (2019). This quantitative study evaluates the health disparities between members of public housing areas and non-public housing residents living at or above poverty level within suboptimal conditions (Yim et al., 2019). Yim et al. (2019) found public housing residents are 2.65 to 2.69 times more likely to experience exposure to preventable hospitalizations and residents with chronic diseases are more than doubled at 3.12 and 4.14. Yim et al., (2019) provides a correlation between public housing and preventable hospitalization but fails to provide data on hospitalizations directly linked to housing violations.

The fact researchers fail to investigate is as Lim et al. (2020) notes, over a 12 year period from 2004 to 2016 public housing has been linked to stable housing. In Lim et al.'s (2020) study 1460 participants were measured by address and reported diabetes diagnosis. 730 residents of

public housing were matched with 730 private/non-public housing residents without diabetic diagnosis (Lim et al. 2020). Of this 65% were in stable housing, 27% reported fixed location issues and 8% reported unstable housing patterns (Lim et al. 2020). By showing an increase of diabetic diagnosis in members of public housing Lim et al (2020) has provided a direct causal relationship between housing instability and health outcome. Although this relation is supported by health professionals' understanding of diabetic connection to stress, the information from the registry does not provide a rationale as to why some residents stayed or why some moved. Thus, a poor housing environment or eviction may not be the only component which determines stress level and therefore, diabetic outcome. Hence, members of these housing types may leave or stay for their own purposes. Moreover, there is no direct link to the cause of the disease because many lifestyle choices could potentially lead to diabetic diagnosis (Lim et al., 2020). Nevertheless, there was no significant difference in diagnosis for public housing when compared to other forms of housing (Lim et al., 2020).

The issue becomes more evident when we consider that Lim et al., (2020) pulled information from the World Trade Center Health Registry from 2003 onward. This means the study is too broad and factors like natural or national disasters are not accounted for when considering why participants would experience mental instability during these periods of time. For example in Galea et al. (2005) study 1355 household participants of public housing complexes were polled regarding their satisfaction or discontentment with the neighborhoods they live in. Participants were tested on population attributes (race, gender, age etc.). The results are used to determine the likelihood of depression between six months and lifetime (Galea et al., 2005). Galea et al. (2005) found that 58% of residents in public housing felt depression at least 1 time in the last 6 months due to their environment and that residents of poor environments are

64% more likely to experience lifetime depression than residents of better built neighborhoods. However, there is no mention of the 2005 New York City transit strike or the 2005 U.S. financial crisis which led to a recession. There is no doubt both of these disasters would cause mental distress which is unrelated to the housing environment.

Furthermore, of the 15,500 occupants of units only 1,355 responded to the survey with neighborhood association factors mentioned above (Galea et al.'s 2005). Thus, this survey only accounts for less than 9% of the population (Galea et al.'s 2005). This study draws biased conclusions linking resident discontent with minority neighborhoods when there is proof that residents of optimal living environments experience some form of psychological distress. Therefore, it is easier to come to the same conclusion as Lim et al. (2020) who specifies fixed housing as a separate issue from the quality of environment because of the regularity, and ease of movement in your own space.

Why Multifaceted Design Plans Inclusive Of Researchers Across Varying Fields of Study Work?

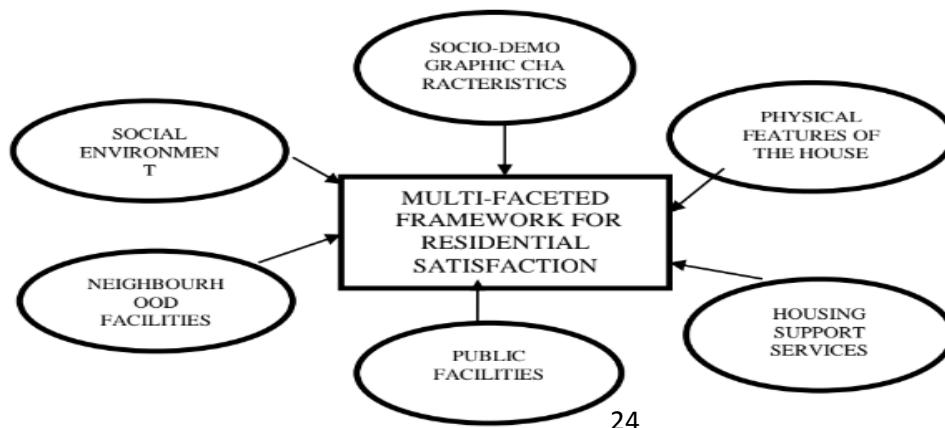
There are many different theories surrounding public housing. The housing needs, housing deficit and psychological construct theory all stem from the residential satisfaction concept (Mohit et al. 2014). This concept is defined as a feeling of content once an individual fulfills needs and desires in housing (Mohit et al. 2014). This is a criteria used in some research designs for studies on public housing and health (Mohit et al., 2014). Factors used to measure this concept include neighborhood quality, socioeconomics, demographics and psychological form (Mohit et al. 2014). Emami et al. (2020) describes this concept as measurements of the success or shortcomings of urban housing for the government and housing analysts. These

measurements are then used to push political policy and neighborhood change (Emanmi et al., 2020).

Mohit et al. (2014) points out that effective research designs are multifaceted and include factors measuring physical features of housing, community support services, publicly funded programs, social environment, and demographic characteristics (Mohit et al., 2014). Doing this will yield determinant results which are more effective, than simply making correlations when providing realistic solutions to housing issues and creating policy. To do this, researchers must think in terms of purposive and comparative evaluation (Mohit et al., 2014). Purposive evaluation is specific to the type of internal living condition like building size and apartment proportions (Mohit et al., 2014). Comparative evaluation refers to the comparison of the housing environment to similar or different conditions like public housing versus private housing etc. (Mohit et al., 2014). Collectively they will lead to design questions which involve thorough information on participant feelings positive/negative (Mohit et al., 2014). Therefore, researchers can gauge community behavioral processes (Mohit et al., 2014). Nonetheless, Mohit et al. (2010) warns that studies need to be done on an individual basis and not in groups so that policies fit specific needs.

Figure 3

Criteria for Multi-Faceted Research Designs Mohit 2014 pg. 60



The correct way is to include varying factors of housing status, parenting, room size, building type and size, floor level, and stigmatization issues of public housing residents (Evans et al., 2003). These are moderating and mediating factors that better explain the causal relationship between public housing and health (Evans et al., 2003). Physical circumstances and socialization factors of housing location change the impact of external/ internal effects on health (Evans et al., 2003). Consequently, Sonik (2022) warns of the danger of linking public housing eviction with mental instability because they are independent factors. When we consider the p-value of the studies findings we can see that the sample sizes could be reduced considerably to focus on specific complaint type and condition within a fixed time period. When considering Leventhal et al.'s (2003) research design one example of an unaccounted factor is mothers who stay home because they have children and how this might increase the likelihood of mental distress regardless of environment (Evans et al., 2003). Therefore, when a study is multifaceted it includes all factors and establishes stable housing (like public housing) as an area which allows the resident control and focus on health and lifestyle without disturbance (Lim et al., 2020).

The Future of Housing and Health Research:

Gary Evans, is a professor with Cornell University whose area of expertise include the environment of childhood poverty, environmental stressors and developmental psychology documents the issue with research designs surrounding housing. His research on housing and mental health was included in the Journal of Social Issues which has published since 1945 on areas covering housing, poverty, and health. Evans et al. (2003) study identifies deficiencies in research design and measurements linking poor housing quality to negative psychological disorders as flawed with inconclusive results. Likewise, the majority of studies done between the

years of 1967-1991 indicate that housing type (high rise or multi family dwellings) like public housing have adverse effects on mental health.

Evans et al. (2003) mentions moderating processes defined as one variable of the study dependent upon another. Therefore, values may change as the variable is adjusted (Evans et al., 2003). Mediating processes refers to processes occurring in the mind received from external stimuli which determine reaction (Evans et al., 2003). This is because the value in variables linking mental health to housing quality changes depending on coverage ratio (case frequency) to the issue (Evans et al., 2003). Thus, variables affecting health which are excluded in the research may be the same/different for the individuals who respond to the survey and live in similar/different housing (Evans et al., 2003). As the study points out, measurements may be unreliable because of these “weak research designs” (Evans et al., 2003 p. 480). Therefore, individual selections indicating poor/good health could be based on factors not considered by the study, as a result the effect of the conclusions drawn is diminished (Evans et al., 2003).

These recommended factors of research improve data on housing factors and mental health inclusive of proposals and policies on building construction, height reduction, room size increases, and apartment separation proportions because they encourage socialization. These are elements that are important when considering isolation as a variable of mental distress (Evans et al., 2003). Thus, effects of the external environment are less likely to play a key role in the determination of health issues (Helms et al., 2017). This means that internal operational factors could be central to understanding why some members of public housing express mental ailment over others (Helms et al., 2017). Moreover, findings indicate that residents with access to affordable or free health care are taking advantage of the opportunities. Therefore, future

research design plans should target community health programs to determine their effectiveness on residents who experience better/worse health.

Conclusion:

Diane Hernandez, a researcher in the areas of health, social environment, and housing with Columbia University published a qualitative evaluation on current research regarding living environment and health quality in order to provide a usable solution for improved health and future research (Hernández et al., 2019). Hernandez analysis includes solutions for future research on public housing be multi-layered around 4 key factors of stability, affordability, quality and safety in neighborhoods (Hernández et al., 2019).

Moreover, Kathryn Leifheit, an epidemiologist and assistant professor with the University of California studying housing and social policies which promote health equity, identifies the issue with studies that do not provide high-quality data on resident history which is connected to neighborhood characteristics and policies (Leifheit et al., 2022). This is the reason some aforementioned authors cannot provide detailed information on legal evictions versus informal evictions (Leifheit et al., 2022). Moreover, researchers may have selection bias when choosing which aspects of the community to focus on (Leifheit et al., 2022). Instead of focusing on the negative effects of community, why not focus on positive effects of community which highlight policies within the community that may/ may not be effective or linked to poor health outcomes (Leifheit et al., 2022). Therefore, researchers are doing a disservice when they focus on neighborhood and health and not neighborhood policy and health (Leifheit et al., 2022).

This way researchers can work along with community health groups to gather first hand information and provide usable solutions to current issues (Leifheit et al., 2022). Thus, research

designs are geared toward causal relationships instead of simply providing a correlation between 2 or more factors (Leifheit et al., 2022). Simply saying because someone lives in a specific neighborhood they have poor mental and physical health is not an adequate research strategy. This means researchers must shift the way they ask questions in order to provide more meaningful and therefore actionable information (Leifheit et al., 2022).

Research design plans on public housing and health that are either too narrow or broad do not work. Researchers must include multifaceted design plans, work collectively and link data from various sources in order to provide definitive proof for conclusions on deteriorated health in public housing. Investigation in these studies must highlight specific factors which contribute to this issue. Given that some of the research designs for the aforementioned studies were done wrong, the conclusion can be drawn that residents are not receiving help on a specific needs basis and health issues may not be as dire as initially thought. For this reason, researchers are currently failing public housing residents. Consequently, research designs solutions which solve the health and housing problem are not effective in eliminating the issue. However, current governmental funds are being funneled through the community based on the assumption of negative health. There is no one way of dealing with the issue of inadequate data and researchers must work together to link information which is contemporary and reflective of the true state of health in public housing.

Chapter 5: Conclusions

As stated by Rabushka and Weissert “nobody likes public housing except the people who live there and those who want to get in” (Rabushka, A., & Weissert, W. G. 1977). Therefore, one likely solution to the information issue is community health based partnerships. These programs must be culturally sensitive to the symptoms, internal effects, and treatment of mental instability for residents across various demographics etc. This is agreeable since community groups provide awareness and allows the researchers focus on health issues directly related to poor environments (Fenelon et al. 2017). These programs would target residents on a one on one basis who feel uncomfortable disclosing internal issues and provide adequate tracking information pertinent to future research. It is recommended that community support programs be available in all areas because this gives residents a feeling of belonging and trust (Galea et al., 2005).

This is more evident in Ellen et al.’s (2020) study because researchers could not assess whether community programs were available to residents in the old or new locations and what effects these programs have on emotional state in these environments. Further studies find that the creation of community programs are well documented within the history of the public housing environment history, however, there is currently no way to measure their effectiveness. Therefore, medicaid, insurance companies and legislative members need to expand the budget in order to include cost effective care which distinguishes pre-existing conditions from new instances of health related ailment (Osypuk et al. 2018). Linking this information to the public

housing administration provides researchers with a way to differentiate health predisposition from internal/external community stressors.

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