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Impact of Katchi Abadi Improvement Programme on Squatters' Health in Punjab

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Abstract

The overall objective of the study was to assess the impact of the Katch Abadi Programme (KIP) on health of the dwellers that was implemented from 1985 to 1990 in Punjab. Three districts (Rawalpindi, Faisalabad and Multan) of Punjab were the universe of the study. A sample of 700 respondents was proportionately selected by using random sampling technique. The data was analyzed by using the Statistical Package for Social Sciences (SPSS) and Yeh's Index of satisfaction. The analysis of the data revealed that visits paid to doctors by the dwellers for their treatment were decreased and the infants' mortality was also decreased due to improvement made in the environment and provision of health services. Moreover, the dwellers perceived better about provision of health services and they are satisfied from the improvement made in the environment and positive impact of KIP on the health of dwellers.

Key words: poor sanitation, infants' mortality, health standards, *Katchi Abadis*, squatters

Introduction

It was estimated in one of the world level studies that over 300 million urban poor in the developing world have few options but to live in squalid, unsafe environment where they face multiple threats to their health and security. Out of them over 200 million in Asia, over 50 million in Latin America, and over 60 million in the un-serviced areas of Africa's cities lived which are now growing at a rate unprecedented in human history. These settlements lack the most basic infrastructure and services, causing occupants to be exposed to disease and vulnerable to natural disasters (The World Bank, 2000).

The phenomenon of squatting took the shape of mushroom growth of *katchi abadis* on public or private land lying vacant in major urban centers of Pakistan. There are over 3000 *katchi abadis* in the country with a population approximating 7 million, which has increased from the recognized 2302-katchi *abadis* with a population of 5.5 million declared eligible for regularization and subsequent upgrading in 1985 by the Government of Pakistan (EUAD, 1987) and about 9.5 million at present (GOPU, 2009).

The situation of these squatter settlements is very miserable and presenting a dismal picture. A research was conducted by Alimuddin, *et al* (2001:16) which revealed that in some of the squatter settlements there were 10 to 15 persons living in one house on three to five *marla* (one *marla* equal to 272.00 sft) plots having one to two rooms and having no safe sanitation facility.

According to Multiple Indicator Cluster Survey (MICS) Punjab, overall, 70 percent population (urban 96 % and rural 58%) uses improved sanitation facilities with 67 percent using flush toilets connected to sewerage systems, septic tanks or pit latrines. This is a significant increase from Punjab MICS 2003-04, which reported 58 percent using improved sanitation facilities. Only 57 percent of household population disposed of wastewater properly including 96 percent in major cities, 88 percent in other urban areas but only 41 percent in rural areas (MICS, 2007-08).

Of late, the government of Pakistan also realized that the programmes of providing public housing have been inadequate to achieve the real target of providing housing, particularly to low-income people. The government decided to take measures for the formalization and regularization and as well as improvement of the *katchi abadis*, so that these may be made suitable for including in the housing stock. Therefore, different *katchi abadi* regularization and improvement programmes were started at different times by the government, directing the local authorities for their implementation. However, the government made considerable efforts to regularize and improve the *katchi abadis* during 1985 to 1990 and a formal Katchi Abadi Improvement Programme (KIP) was launched in 1985 (Anwar, 2002).

The previous researches did not clearly indicate and explore the impact of these improvement programmes of *katch abadis* on the health of the

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dwellers of these low-income areas. This paper is about the health impact assessment of the KIP implemented in Punjab from 1985 to 1990. The main objective of the study was to examine the effects and impact of the KIP on the health related aspects of the residents (infants, young and adults) of squatter settlements (*katchi abadis*).

Materials and Methods

Three districts of the Punjab province i.e. Rawalpindi, Faisalabad and Multan were selected to assess the health impact of KIP in Punjab as universe of the study. There were 73 *Katchi Abadi* in Faisalabad, 25 in Multan and 8 in Rawalpindi as per the list provided by the Directorate General of *Katchi Abadis* and Urban Improvement, Local Government and Rural Development Department, government of the Punjab, Lahore (2009). A proportionate number of *katchi abadis* from each district was taken. Fitzgibbon and Morris, 1987:163 stated a simple principle or rule of thumb that "*as the size of the population increases the sample size decreases"*. Therefore, a sample of 700 respondents was envisaged as appropriate for this study. The sampling weights technique has been advocated by Kish (1965). This proportionate technique was also used by Anwar (2002). The interview schedule was used as data collection tool. The Statistical Package for Social Sciences (SPSS) was used to analyze the data.
Yeh's Index of satisfaction (YIS) was also used to analyze the people's satisfaction level regarding the various factors of environment related and having impact on health status of the dwellers. Putting it into a symbolic form, the YIS can be written into the following expression:

$$YIS = \frac{S-D}{R}$$

Where:
S = the number of people satisfied with one attribute.
D = the number of people dissatisfied with one attribute; and
R = the total number of responses

This index ranges from +1 to –1. A positive value indicates that there are more respondents who are satisfied than those who are dissatisfied. The larger the value, the more intensive is the degree of satisfaction or dissatisfaction.

Results and Discussion

Lewin (1981) viewed that in majority of the squatter settlements, the health facilities were absent, shortage of provision or inadequately provided. Secondly, the provision of health facility in every locality is essential. Moreover, the poor sanitation facilities-non availability of sewerage, drainage, solid waste collection facilities and non-development of parks as well as shortage of water supply also affects the health status of the squatters and especially on infants' mortality. The provision of health facility i.e. construction and/or establishment of dispensaries in *Katchi Abis* was one of the components of KIP. To assess the overall positive impact of KIP on the improvement mad in the environment and how it directly and indirectly brought changes in the health status of the squatters, the views of the respondents were ascertained through the survey. The demographic characteristics of the squatters have also some effects on the health of the squatters, therefore, the changes occurred in the demographic characteristics of the squatters due to implementation of KIP were also explored in order to determine the composite impact of KIP on the health of the squatters.

Impact on Demographic Characteristics

The changes in demographic factors like the household size, and number of households per structure are described in this section. The household size determines the level of overcrowding in the dwellings of *katchi abadis*. In some of the *katchi abadis* the average household size was large and about 10 to 15 people were living in one house of small size before the implementation of KIP (Alimmudin *et all* ibid).

Effects and Impact on Size of Household

The analysis of data (Table:1) indicates that the percentage of household size from 7-10 and from 11-13 is 63.7 and 16.4 respectively and average household size is 8.17 as compared to average household size of 11 before the implementation of KIP. This indicates that the size of household in the *katchi abadis* where the KIP was implemented is medium level and it is due to improvement made under the KIP, which can be attributed to KIP and resultantly the overcrowding and congestion has reduced, which will have impact on the health of dwellers.

Effects and Impact on Number of Households per Structure

The number of households in the structure is an important parameter in relation to accommodation density. The analysis of data (Table: 1) reveals that the percentage of I-household, 2-households and 3-households per structure in 1985 (before KIP) was 27.4, 61.0 and 11.1 respectively. At present the percentage of I-household, 2-households and 3-households per structure is 69.3, 29.0 and 1.7 respectively. This indicates a major reduction in number of households per structure after the

implementation of KIP, which is a positive impact and it have reduced the accommodation density per unit area. Therefore, it will have definitely good impacts on the health of squatters.

Effects on Health of the Household Members

Easy access to potable drinking water is one of the basic human needs upon which the health status of people largely depends. In Pakistan more than 50% diseases are spread due to non-availability of safe drinking water. The provision of potable drinking water to *Katchi Abadis* was included in KIP. It was difficult to get the views of the respondents by directly asking about the improvement occurred in the health status of the squatters that was attributed to KIP. Therefore, some indicators for indirect measure of health status were made. A question was asked from the respondents that did they notice any change in the number of visits paid to doctor for check up after the implementation of KIP? This was the indirect way of getting the reflection of the respondents about the better impacts of KIP on the health status of the households' members due to improvement made in the sanitation. The results are presented in Table 2:

The analysis of data (Table: 2) reveals that a majority (54.28%) of respondents reported that the number of visits paid to doctor for check up were decreased after the implementation of KIP and another 32.28 percent of respondents reported no change. The reduction in number of visits paid to doctor for check up was the positive effect of the provision of health facilities in *katchi abadis* under the KIP. It appeared that there were positive impacts of KIP on the health of the dwellers.

Table 1 Changes in Demographic Characteristics (Indicators)

Demographic Factors	Frequency	Percentage
Household Members at Present		
3-6 members	139	19.19
7-10 members	446	63.7
11-13 members	115	16.4
Total	**700**	**100.0**
Average household size = 8.17		
How Many Households were living in the Structure in 1985?		
1-household	192	27.4
2-households	427	61.0
3-households	81	11.6
Total	**700**	**100.0**
How Many Households are living in the Structure at Present?		
1-household	485	69.3
2-households	203	29.0
3-households	12	1.7
Total	**700**	**100.0**

Table 2 Distribution of Respondents According Change in Visits Paid to Doctor

Health Related Aspects	Frequency	Percent
Decreased	380	54.28
No change	230	32.86
Increased	90	12.86
Total	**700**	**100.0**

Table 3 Distribution of Respondents According to Opinion about Status Infants' Mortality

Opinion about Infants Mortality	Frequency	Percent
Decreased	450	64.3
NO Change	166	23.7
Increased	84	12.0
Total	**700**	**100.0**

Effects on Infants' Mortality

Diarrheal diseases are a major cause of infants and child's mortality in Pakistan. It was revealed from the findings of the Pakistan Integrated Household Survey (PIHS) of 1998 that almost 250,000 children under 5 years of age died due to these diseases every year. Similarly in MICS 2007-08 in Punjab it was revealed that 13% of children aged 0-59 moths had a recent illness (diarrhea or acute respiratory infection) in the last two weeks before the survey. In the same survey it was found that the infant mortality rate (IMR) was 86 per 1000 for rural areas while mortality in urban areas is about 35-40% lower than urban areas. The underlying cause of diarrheal disease includes inadequate access to safe drinking water, household and environmental sanitation and poor hygienic practices. The provision of potable drinking water, improvement of sanitation-sewerage, pavement of streets, improvement of drainage and solid waste collection were included in KIP for the environmental improvement. The change in the infants' mortality would reflect the environmental improvement occurred due to implementation of KIP. A question was asked from the respondents that did changes occur in Infants' mortality after the implementation of KIP. The respondents' responses are presented in Table 2. The analysis of the data (Table: 2) reveals that 64.3 percent respondents replied that the infants' mortality was reduced after the implementation of KIP. This is a positive effect that brought good impact of KIP. The association between the environmental improvements of squatter settlements and reduction in infants' mortality (cause and effect relationship) has been confirmed by many studies. For example in a study conducted in upgraded area of El Mezquital, Guatemala, infant mortality rates fell by 90 percent and crime by 43 percent (The World Bank Group, 2000).

It has been concluded by many research scientists that in most of the empirical research studies, per capita income, nutritional status, adult literacy and the availability of health services are included as important determinants of development status like Correa (1992), Folop and Rink (1983), Gredtham and Jonsson (1992), Grosse and Perry (1983), Hitiris and Posnett (1992), and Wheelor (1980).

Perception of Respondents about Improvement made in Environment and Health Status of Dwellers

The perception of improvement about living conditions tells that how much the KIP has been able to achieve its objectives. The higher the level of improvement perceived by the respondents, better the impacts of the programme on health.

Perception of Improvement about Environmental, and Health Related Aspects

The user's opinion about the change in the environment was one of parameters, which was used for measuring the impacts of KIP on the social and physical environment as well as on health of dwellers. The perception of the respondents about the physical improvement was *cross-triangulated* with the secondary data collected from the implementing agencies, which were responsible for implementing the KIP.

The analysis of the data from Table 4 reveals that the percentage of the respondents who perceived better improvement made in cleanliness, health of the households' members, physical outlook of the area, distance to water supply and access to dispensary was 64.1, 67.1, 71.9, 67.3, and 71.0 respectively. It reveals from the analysis that majority of the respondents perceived that the present environmental and social situations were better than before the implementation of KIP. Moreover, they have perceived that the accesses to water supply and dispensary and health of the household members have improved.

The above results reveal that a majority (69.3%) of respondents replied that they overall perceived better about the improvement made in environment and status of the dwellers.

In addition of above-mentioned descriptive analysis the Yeh's index was also used for further analysis. Yeh's Index of improvement number gives a precise and comparable figure, which indicates the opinion of the respondents about a particular facility (*Singapore Housing and Development Board,* 1975, Zaidi, 1982 and Perveen, 2009).

Above Table 5: indicates that the majority of inhabitants perceived that the present environmental conditions in *katchi abadis* are better than before the implementation of KIP. The index values of perception for health of households' members, like cleanliness of the area, physical outlook of the area, access to open spaces, access to water supply and access to dispensary indicating the perception of respondents about the improvement due to KIP were 0.551, 0.447, 0.611, 0.610, 0.501 and 0.580 respectively. The overall index value of perception was **0.550** indicating that people had better perception about the improvement made due to intervention of KIP. This indicated that the people had perceived a high level of improvement in physical environment as well as provision of health services and its impact on health of the dwellers.

Impact on Satisfaction Level of the Respondents Regarding Improvement made in Provision of Health Related Facilities

The level of satisfaction with various elements of KIP related to health aspects of the dwellers gives us a very useful yardstick to measure the quality of various services provided in the *katchi abadis* and their subsequent impact on health of the dwellers.

Table 4 Perception of Respondents about the Environmental and Social Improvements

Sr. #	Social and Environmental Aspects	Perception Levels					
		Better		NO Change		Worst	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1.	Cleanliness	499	64.1	115	16.4	136	19.4
2.	Health of the Household Members	470	67.1	146	20.9	84	12.0
3.	Physical Outlook of the Area	503	71.9	122	17.4	75	10.7
4.	Distance to Water Supply	471	67.3	119	17.0	110	15.7
5.	Access to Dispensary	496	71.0	112	16.0	91	13.0
Overall Perception Level		**485**	**69.3**	**123**	**17.6**	**92**	**13.1**

Table 5 Indices of Improvement Perceptions for Various Environmental and Health Aspects

Environmental and Social Aspects	Index of Improvement
Health of the Household Members	0.551
Cleanliness of the area	0.447
Physical outlook of the Area	0.611
Access to Open Spaces/Parks	0.610
Access to Water Supply	0.501
Access to Dispensary	0.580
Overall Index of Perception	**0.550**

The higher the level of satisfaction, the more effective is the impact of KIP on health of the inhabitants as community satisfaction is prime objective all development projects.

Impact on Satisfaction Level Regarding Provision of Utilities

Table 6: portrays the inhabitants' level of satisfaction regarding improvement made in provision of utility services and community facilities under KIP in various *katchi abadis* that have impact on health directly or indirectly. The analysis of the data depicts that the percentages of the respondents who were satisfied with the dispensary facility, water supply, and sewerage, drainage of the area, and open spaces, are 52.9, 62.1, 51.0, 56.7, and 58.7 respectively. The percentage of respondents who were overall satisfied with the provision of these services and improvement in the health status of the dwellers in *katchi abadis* under the KIP was 65.9 which is a major proportion. This reveals that more people in *kathci abadis* were satisfied with the provision of these healths related utility services under the KIP. However, the percentage of the respondents who were satisfied with solid waste management and garbage disposal was 33.1 and 41.4 respectively. The lower percentage for these two items indicates that dwellers were not satisfied with solid waste management and garbage disposal.

Table 6 Satisfaction Level of Respondents Regarding Provision of Health Related Aspects

Sr. #	Health Related Aspects	Satisfaction Levels					
		Satisfied		NO Opinion		Dissatisfied	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1.	Dispensary facility	370	52.9	135	19.3	195	27.9
2.	Access Water Supply	435	62.1	84	12.0	181	25.9
3.	Sewerage facility	357	51.0	142	203	201	28.7
4.	Drainage of Area	397	56.7	131	18.7	172	24.6
5.	Open Spaces	411	58.7	107	15.3	182	26.0
6.	Garbage Disposal	290	41.4	170	24.3	240	34.3
Overall Satisfaction Level		**461**	**65.9**	**95**	**13.6**	**144**	**20.6**

References

Alimuddin, S., Hssan, A. and Sadiq, A. The Work of Anjuman Samaji Behbood and the Larger Faisalabad Context, Pakistan, IIED Working Paper 7 on Poverty Reduction in Urban Areas, Internal Institute for Environment and Development, London, 2001.

Anonymous. Shelter for Homeless, Pakistan Canvas, Environment and Urban Affairs Division, Government of Pakistan, Islamabad. 1987.

Anonymous. Pakistan Integrated Household Surveys, Ministry of housing and works, Government of Pakistan, Islamabad, 1998.

Anonymous. National Housing Policy 2001, Planning Commission, Government of Pakistan, Islamabad. 2001.

Anonymous. Economic Survey of Pakistan 2002-2003, Economic Advisor's Wing, Finance Division, Government of Pakistan, Islamabad. 2002.

Anonymous. Directorate General of *Katchi Abadis* and Urban Improvement, Local Government and Rural Development Department, Government of the Punjab, Lahore. 2009.

Anonymous. Multiple Indicator Cluster Survey (MICS), Punjab. Vol-1, Provincial Report, Planning and Development Department, Bureau of Statistics, Lahore, 2007-08.

Anwar, H. Nawaz. The Impact Assessment of Katchi Abadi Improement Programme (KIP) in Punjab, PhD Thesis, Department of Rural Sociology, UAF. 2002.

Correa, H. Namkonong, K. "Determinants and Effects of Health Policy", Journal of Policy Modeling, 1992, 14 (1):41-63.

Fitzgibbon, C. T., and Morris, L. Lyons. How to Design a Programme Evaluation, Newbury Park, CA: Sage. 1987.

Folop, T. and Rinke, O. W. A. "Health Manpower in Relation to Socio-Economic Development and Status, Research in Human Capital and Development" JAI, Press Inc. 1983.

Gerdtham, U.G. and Jonsson, B. "Human International Comparisons of Health Care Expenditure: Conversion Factor Instability", Heteroscedasticity, Outliers and Robust Estimators, *Journal of Health Economics*, 1992, 11:189-197.

Grosse, R.N; and Perry, H. B. "Correlates of Life Expectancy in Less Developed Countries, Research in Human Capital and Development ", JAI, Press Inc. 1983.

Hitiris, T and Posnett, J. "The Determinants and Effects of Health Expenditure in Developed Countries", Journal of Health Economics, 1992, 11:173-181.

Kish, L. Survey Sampling, John Willey and Sons, New York. 1965.

Merrill. Quoted in, Sabri Pervaiz Iqbal, People Housing Resources unpublished Master Thesis, AIT, Bangkok, Thailand. 1975.

Lewin, A. Housing Comparative in Developing Countries: A Manual of Low Cost Housing Schemes, John Willey & Sons, New York. 1981.

Perveen, S. The Role of Faisalabad Area Upgrading Project in the Development of Basic Education in Low-income Areas of Faisalabad City, M.Sc. Thesis, department of Sociology, GC University Faisalabad, 2009.

Shahidullah, M. Comparative Study of Planning Standards in the Sub-continental Metropolises. Special Studies Project Report No. 120: Asian Institute of Technology, Bangkok, Thailand, 1975.

Stephen. H. K. Yeh, ed; "Public Housing in Singapore". Singapore: Housing and Development Board, 1975, pp. 227-228.

Wheeler, D; "Basic Needs Fulfillment and Economic Growth", A Simultaneous Model, *Journal of Development Economics,* 1980, 7:435-45.

World Bank. Urban Upgrading: The World Bank Group, 2000.

Zaidi, S. S. An Evaluation of Katchi Abadi Improvement Programme in Lahore, Pakistan, M.Sc. Thesis, Asian Institute of Technology, Bangkok, Thailand, 1982.