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Mini Review

Inequities in Urban Health: A Synthesis of Evidence

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Abstract

Cities throughout the world, no matter from developed or developing countries, had acted as foci of attraction for people from resource-poor settings. The co-existence of advantages and disadvantages of city life creating urban disparities is an interesting phenomenon. The research questions driving this synthesis are based on health inequities in urban areas in low and middle income countries (LMICs) with a special focus on India, on the extent of urban health inequities, the dimensions of urban health inequities and the factors associated with, or pathways and mechanisms driving urban health inequities. Based on an assessment of each article as to whether it describes a health gap, seeks to identify correlates or determinants of the gaps or to unravel pathways and mechanisms contributing to urban health inequities, we have come up with a framework of inter-connected factors contributing to urban health inequities. We found that undeniably urban health inequity was directed and shaped by urban governance, inequitable urban living environment which includes the physical and social environment, urban service delivery component of the health system and other public service delivery systems and ultimately how the above-said factors have an effect on the urban poor beneficiary in creating such health inequities. This proposed network of inter-connected linkages in urban health inequities provides a detailed knowledge of the various factors influencing urban health inequities and how these operate in generating the inequity share.

Keywords: urban health; health inequity; urban poor; urban slums.

Introduction

Cities bring opportunities such as more employment, better living conditions and a greater range of health services; nevertheless, they equally bring challenges against attaining better health. The 2018 revision of the World Urbanization Prospects highlighted that 55% of the world's population lived in urban areas and that this proportion was expected to increase to 68% by 2050 (United Nations, 2018). There are several studies on urban health in low and middle-income countries (LMICs). Eminent authors on the analysis of urban health in India, claims that urban health should be looked up as a complex field influenced by various factors as well as 'urban health' influencing these factors (Butsch *et al.*, 2012). The research question for this synthesis is based on health inequities in urban areas in LMICs with a special focus on India: What is the extent and dimensions of urban health inequities and what are the factors associated with, or pathways and mechanisms driving urban health inequities?

Much of the existing articles we came across focused on the urban-rural averages about services and largely unacknowledged the existing inequities that materialize

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within an urban setting. Studies focusing on intra-urban differences are very limited and those studies, which have mentioned have limited its discussion as part of policy suggestions alone. This synthesis paper, differ as it attempts to unravel the existing health inequities in urban areas. The belief is that health inequities in urban areas are not because of any sole reason, but due to an interplay of various determinants. This paper attempts to synthesize the evidence on urban health in LMICs and to combine findings across various studies to understand various pathways and mechanisms creating inequities in urban health. The approach for this review consisted of three major steps: the first was the identification of relevant articles; the second was extraction from the articles of information pertinent to answering the research questions. The third step was to make connections across the various articles to evolve a framework of interconnected factors contributing to urban health inequities. The search included traditional databases, the Pub med, Google scholar and Science direct. A range of articles included were journal articles, government reports, and reports of international organizations. Search terms were articulated to reflect the objective of this synthesis and various combinations of the search terms were taken to extract as many relevant articles as possible. To access journal articles, basic search terms used were "urban health", "health inequity", "urban slums", "urban poor", "migrant health" and "urban advantage". Since our focus was on India and other LMIC's; "developing countries / India/ LMICs" were added with each of the combinations (Fig. 1).

Those articles that were written and published in the English language were selected. We have incorporated the criteria of the much-stated methodology by Dixon-Woods *et al*. by inducting and interpreting articles, which helped in the generation of theory with robust illustrative power. This further helped us to build a theoretical model. The quality issue was kept in mind by selecting those journal articles that were peer-reviewed and those reports that have been published by international organizations and whether the documents provided a clear account of the process by which their findings we reproduced (Dixon-Woods *et al.*, 2006). The total number of search hits was 267, full-text articles were read as we aimed to analyze the health inequity dimension through the entire article; as abstracts emphasize only on the most important themes and findings. Those articles that dealt with clinical studies in urban settings, urban environmental studies dealing with infrastructure upgrading and disaster management were excluded. Initial screening reduced the number of relevant articles to 54.

Assessment and Analysis

The 54 selected articles were read, assessed and summarized. The identified themes were urban health mechanisms/determinants/pathways and the other two dimensions of inequities: urban health status and urban health care service utilization. Such an assessment (Table 1) was done to explore, which major themes articles covered. Most of the articles were from LMIC with a specific focus of attention were given to literature from India. The selected articles were published between the years 1996 and 2016; although timeframe was not an important criterion. Some of the diverse elements of the assorted themes that have tried to explain health inequity dimensions were urban governance, urban poverty, urban living environment, urban nutrition systems, slum conditions, health system determinants, child health, maternal health, and women's health. Among this child health, slum health, urban living environment, maternal health was the major cross-cutting themes across major articles.

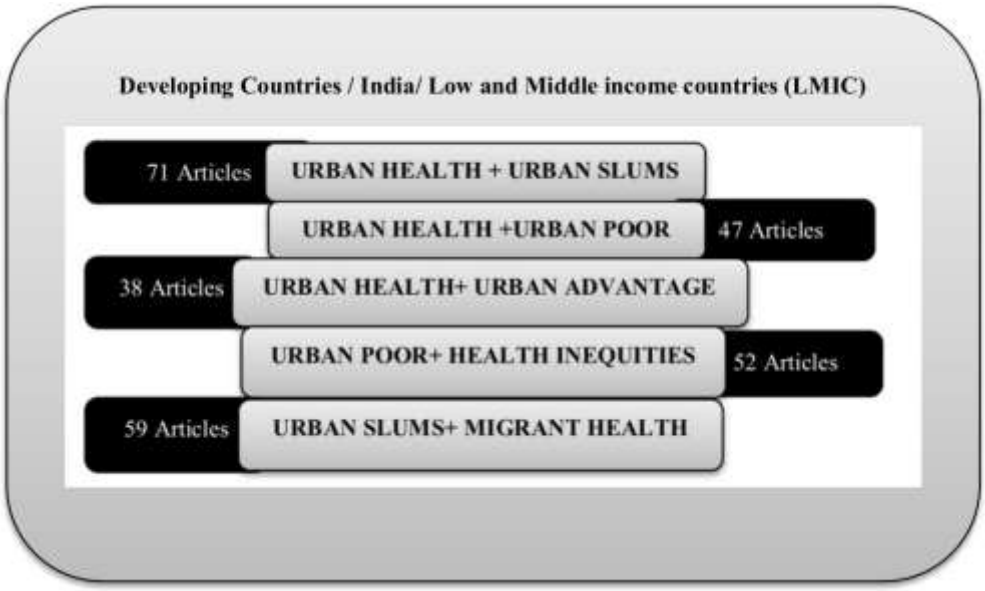

Fig. 1: Pictorial representation of combinations of search terms used for this synthesis.

Table 1: Table depicting the author, year of publication, country, and Range of themes (Urban health determinants, Urban health status and Urban health care service utilization) covered by the selected articles for this synthesis

Author, Year of publication	**Country**	**Themes** (No. of articles)		
		Urban health mechanisms/ determinants/pathways (36)	**Urban health status** (31)	**Urban health care service utilization** (15)
Riley *et al*., 2007	Brazil	✓		
Vlahov *et al*., 2007		✓		
Agarwal *et al*., 2005	India	✓	✓	
Fotso *et al*., 2009	Kenya	✓	✓	
Anand *et al*., 2007	India	✓	✓	
Matthews *et al*., 2010	30 developing countries in Asia, Africa & Latin America		✓	
Kjellstrom *et al*., 2007		✓		
Elsey *et al*., 2016	LMIC's (Nepal & Bangladesh)			✓
Prasad *et al*., 2015	15 cities from 7 countries from Asia and Africa (Indonesia, Iran, Kenya, Mongolia, Philippines, Sri Lanka & Vietnam)			✓
de Snyder *et al*., 2011	LMIC's	✓	✓	✓
Agarwal and Sethi, 2013	India		✓	
Stephens 2012		✓	✓	✓
Van de Poel *et al*., 2007	47 countries from: Sub Saharan Africa, Near East, South & Southeast Asia, Latin America & Caribbean		✓	
Friel S *et al*., 2011	LMIC's	✓		✓
Ezeh *et al*., 2016		✓	✓	
Ernst *et al*., 2013		✓	✓	
Gaur *et al*., 2013	India	✓	✓	
Zulu *et al*., 2011	Kenya	✓		
Barten *et al*., 2011		✓		✓
Harpham, 2009	Low income developing countries	✓	✓	
Vearey *et al*., 2010	South Africa	✓		✓
Chandola, 2012	Low, middle and high income countries	✓	✓	
Sharma *et al*., 2015	India		✓	✓
Devasenapathy *et al*., 2015	India		✓	✓

Author, Year of publication	**Country**	**Themes** (No. of articles)		
		Urban health mechanisms/ determinants/pathways (36)	**Urban health status** (31)	**Urban health care service utilization** (15)
van de Vijver *et al*., 2015	Kenya			✓
Fotso, 2006	15 countries from Sub Saharan Africa		✓	
Dixon *et al*., 2007		✓	✓	
Stephens, 1996			✓	
Collins and Hayes, 2010		✓		✓
Smit *et al*., 2011	LMIC's	✓		
Lhamsuren *et al*., 2012	Mongolia	✓		
Alcock *et al*., 2015	India		✓	✓
Kumaresan *et al*., 2010		✓		✓
Montgomery, 2009	Developing countries	✓	✓	
Vlahov *et al*., 2005	Latin American countries	✓		
Bortz *et al*., 2015	Brazil	✓		
Kumar and Singh, 2013	India		✓	
Todd, 1996		✓	✓	
WHO and UN-HABITAT, 2010			✓	
Vaid *et al*., 2007	India		✓	
Agarwal *et al*., 2007	India		✓	✓
Hussain *et al*., 1999	Bangladesh	✓	✓	
Roy *et al*., 2009	India		✓	
Sharma *et al*., 1998	India	✓		
Fotso *et al*., 2008	Kenya		✓	✓
Srivastava *et al*., 2012	India		✓	
Emina *et al*., 2011	Kenya	✓		
Ompad *et al*., 2007		✓		
Kamndaya *et al*., 2015	Malawi	✓	✓	
Banerjee *et al*., 2016	India	✓	✓	
Ahmed, 2014	Bangladesh	✓		
Lilford *et al*., 2016	LMIC's	✓		
Isunju *et al*., 2011		✓		
Galea *et al*., 2005		✓		

Wherever information regarding country is unavailable, it is left blank

Concepts of 'Inequity' in Urban Health

Concept of 'inequality' has been used interchangeably along with inequity; renowned reports had tried to explain the differences, as 'health inequalities' arise due to differences in health between groups, while 'health inequities' are modifiable and considered to be a subset of former (WHO, 2010). Acknowledging such inequalities by

addressing the relationships between the poor and wealthier counterparts and the distribution of health inequality in the urban area reveals wider social inequalities (Todd, 1996). Articles do stress on the distinction between urban inequality and urban poverty, as poverty is based on absolute standards of living as part of the society or in this context being 'urban poor' (Stephens 1996). Most articles try to bring novel ideas of looking urban health inequity; from a whole level of development trajectories like lifestyles, behavioral and consumption patterns of affluent ones for reducing the disparity, which is linked to health disadvantage of the bottom strata of society (Stephens 1996).

Health inequities in urban slums emerged as a major domain; it seems like the majority of articles contribute to filling the knowledge gap. Scholarly articles disclose that slum neighborhoods are characterized by homogeneous population groups in densely packed areas, promote the spread of illness; where slums reflect dynamic scenarios where one person's health influences others (Lilford *et al.*, 2016). Paper by Harpham has analyzed urban poverty and urban slums incorporating spatial and temporal heterogeneity theme. Slum settlements were seen as the most outstanding form of disparity; where urban poor are homogeneous mass residing in slum-like settlements as well as considered as social class undergoing continuous differentiation (Harpham, 2009; Zulu *et al.*, 2011). Spatial and socio-economic factors of disadvantaged neighborhoods lead to segregation of poor people, which results in poor health outcomes for poor communities and such contextual factors intensify individual-level factors and upsurge vulnerabilities (Chandola, 2012; Kamndya *et al.*, 2015). An important paper by Vlahov *et al*. have analyzed several key determinants of urban health that can influence city living such as population composition, physical environment, social environment, and availability and access to health and social services (Vlahov *et al.*, 2007). Considering 'being urban' as an intricate interplay of factors generating inequities at each level, it becomes mandatory for us to look into our three selected themes more explicitly.

Articles Addressing Gaps, Pathways and Mechanisms Contributing to Urban Health Inequities

The article exhibits how the extent of urban development leads to the production of urban health inequities and how these urban inequities can be reduced by action focused on the four themes: urban governance, planning and design, social environment and climate change (Friel *et al.*, 2011). It offers an important understanding of the determinants of urban health inequity since its focus is on LMICS, which is moreover our area of interest. It gives thoughtful effort on identifying the structural drivers of urban health equity such as political empowerment and on intermediate determinants, urban daily living conditions; which remains and never to be overlooked. We believe that the magnitude of urban health inequity is determined by the urban living conditions and the much-applauded work by Vlahov *et al*. features how physical and social determinants of urban areas intricately play. For example, the physical environmental determinants of urban areas such as access to safe drinking water, sanitation, drainage, garbage disposal, built environment, noise, and air pollution have got a significant influence on health in an urban setting (Vlahov *et al.*, 2007). Disparities in urban women's nutritional status illustrate vulnerability in health outcomes through a phenomenon of 'malnutrition duality', where the major proportion of urban women are either undernourished or overnourished (Gaur *et al.*, 2013).

Geographical relocation from rural to urban areas expose most migrants to various environmental challenges and the rapid rise of slum settlements owing to economic vulnerability designates large segments of urban areas underprivileged (Fotso *et al.*, 2008; Srivastava *et al.*, 2012). Widening intra-urban inequities seen in child and maternal health endorses that the normally called 'urban bias' in the concentration and allocation of resources in urban areas does not convert into health advantage for urban poor (Van de Poel *et al.*, 2007; Agarwal and Sethi, 2013). Health systems plays a major role in contributing a major share of urban health inequities; the article highlights negligence of the vulnerable slum community by the formal health sector as the major cause for such pathways (Agarwal *et al.*, 2005).

The Synthesis Summary

This synthesis involves assessment of how authors have approached urban health inequity dimensions. Paper by Chandola *et al*. followed the hypothesis; the socio-economic and spatial inequality adversely affects the health of poor as well as population health (Chandola, 2012). Their finding supports their hypothesis; like poor people living in the poorer neighborhood are socio-economically deprived, resulting in poor health outcomes. An interesting paper by Zulu *et al*. adopted a life course approach to assessing how migration, urban poverty, and health status influence each other at different stages of the life cycle (Zulu *et al.*, 2011). Earlier slum health was always considered as a neglected topic of research, but today it has gained its importance in the mainstream research arena as urban poor are considered as a vulnerable population. This holds with the research question which Harpham's paper dealt with: 'What have we learned about urban health and the knowledge gap relating to this?' Slum health has always been considered as diseases of the neglected population, often ignored by the formal health system (Riley *et al.*, 2007). This paper failed to recognize a hypothesis on why the formal health system encounters slum dwellers only at a later phase of the disease. A paper conceptualizes health inequity as created

by unequal social context that environs the life of socially excluded groups resulting in social vulnerability (de Snyder *et al.*, 2011). Paper indeed provided global evidence on existing dimensions of social exclusion and inequities and recommends that health should be considered as part of broad social development process. Another paper tries to conceptualize how health inequity can be improved by the living environment comprising both social and environmental determinants (Kjellstrom *et al.*, 2007). However, paper lacked a clear research question and mainly focused on approaches to achieve an equitable environment and make unclear inference that equitable environment is needed to promote health equity. Vlahov *et al.* paper concludes by saying that as urban environment and population is markedly different from other settings, programs targeting them should closely address the needs of urban population. Yet another paper addresses the disparities that exist within an urban poor subpopulation, and it makes an important fact that 'all slums are not equal' and there exists a wide socio-economic position (Devasenapathy *et al.*, 2015). Van de Poel *et al.* concludes that the nutritional statuses of children in urban areas are becoming poorer in concurrent with the socio-economic inequality which is also becoming larger in urban areas.

Some of the conceptual frameworks on urban health stressed on the importance of urban health determinants but fell through to cover the consequences of these determinants. This proposed 'Network of interconnected linkages in urban health inequities' (Fig. 2) provides a catalogue of factors and how they operate in generating the inequity share. We account that urban health inequities result from interplay of factors that operate at multiple levels; affects urban poor more, as they are coupled with urban challenges too. Poor urban governance at national, regional and local level materializes into urban health inequity. The urban living environment is more or less considered as spatial entities where the imbalance of fairness works, which results in generating health inequities. Urban service delivery components of health system and other public service delivery systems, together with urban living environment, create urban health inequities. Failure to identify informal slums by the formal health system and other public service systems results in weak staffing patterns, unavailability of services, poor urban infrastructure and lower standards of care. Urban poor beneficiaries are the visible markers of urban health inequities, as they are affected mutually by both extremes of urban life. Financial constraints owing to poor purchasing ability, cultural barriers, lack of knowledge leading to lack of access, lack of awareness, social exclusion are some of the factors which further generate health inequity.

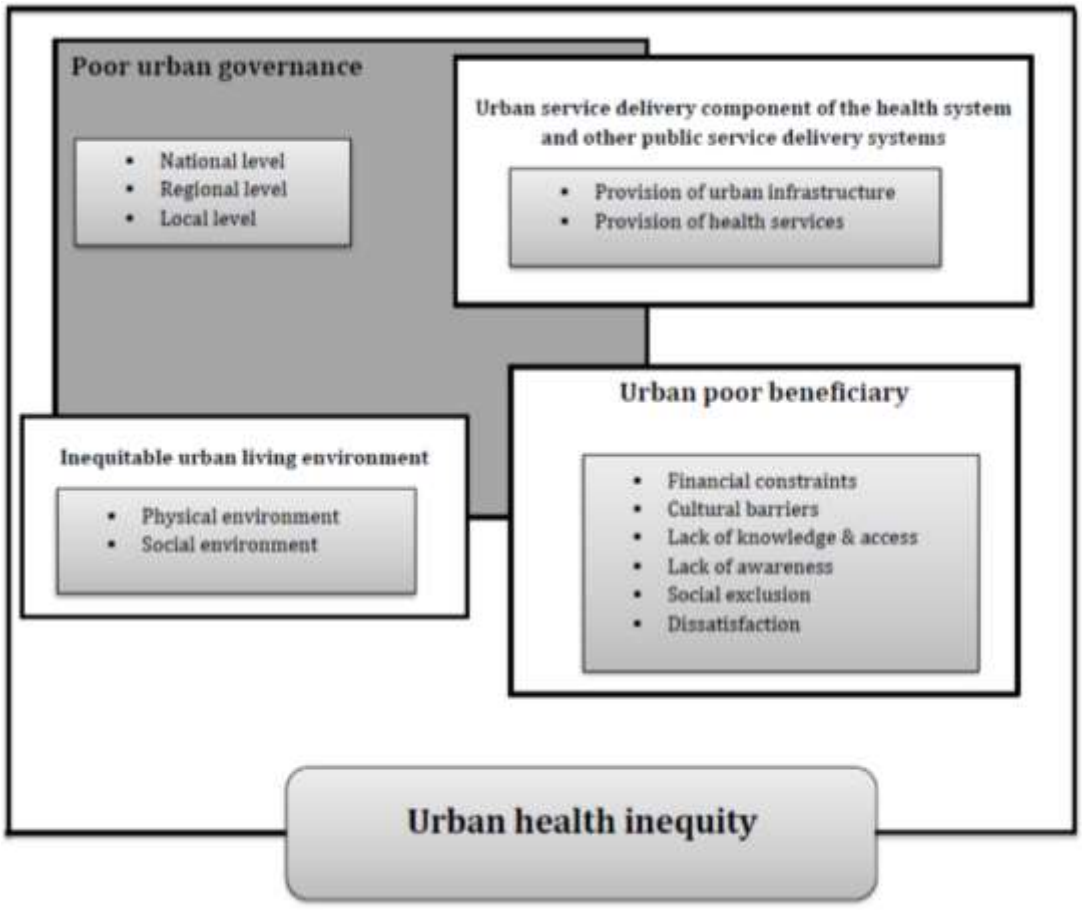

Fig. 2: Network of interconnected linkages in urban health inequities

Conclusion

Most of the well-proclaimed frameworks talked about urban context and how determinants operate in defining urban health (Vlahov *et al.*, 2007; Agarwal *et al.*, 2007; Roy *et al.*, 2009). Our attempt stands apart by adopting an interpretative way of synthesizing evidence and conceptualizing this evidence into a grounded theory. It's time to think beyond the broader concept of urban governance and rather fitting in it as an integral part as well as focusing on the social and environmental determinants more methodically to identify the mechanisms contributing to health inequities. Unfolded dimensions hold for most of the developing countries including India. In India, the rapid and continuing rise of urban population increases the scale of urban health challenges and together with inequity element, urban poor beneficiaries are enormously affected. From an action and research point of view; urban slums should be looked like a separate entity with specific determinant foci. The intra-urban inequity mechanisms are identified by most of the articles but what is important is that whether these articles address why these mechanisms do occur in such a setting? Most papers while addressing such disparities recommend the need for a specific targeted approach, but it seems questionable to see how far the health inequity dimension can be addressed through such a targeted approach. We agree, as Todd pointed out as if these intra-urban differences could look from an angle, that could identify 'which' health issues and 'why', then it becomes possible to understand the underlying problems (Todd, 1996).

We do not claim that this theoretical framework is as such novel, but in turn, can be seen as a novel way of addressing the health inequity dimensions. There is scope for further research in this area by trying to look at how theoretical frameworks have been used by prior researchers and how they have conceptualized the health inequity segment.

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