SOCIAL CAPITAL AND HOUSEHOLD HEALTH-SEEKING BEHAVIOUR FOR CHILDREN IN THE CONTEXT OF URBAN NEIGHBOURHOODS

The case of Khayelitsha in Western Cape, South Africa

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Dedication

I dedicate this dissertation to my wife Cynthia, my son Khumbo and my daughter Sangwani.
Abstract

Background

Globally, almost 8 million children died in 2010 before reaching the age of 5 largely due to preventable diseases. Analysis of the distribution of child mortality indicators highlights huge differentials that still exist both between and within regions. Prompt seeking of appropriate healthcare by caregivers is critical for effective management of childhood illnesses and ultimately for mortality reduction. Studies have shown that households can draw on social capital, including trust and social networks, to improve health outcomes for children. Other studies have demonstrated that health outcomes may significantly differ across different neighbourhoods of the same community. Therefore, understanding social capital and healthcare-seeking behaviour in the context of neighbourhoods can help in the formulation of responsive health policies and strategies that promote child health and overall well-being for different populations. The objective of this study was to investigate social capital factors that are associated with healthcare-seeking behaviour of caregivers when their children become ill, using the case of neighbourhoods in Khayelitsha Township in the Western Cape Province of South Africa.

Methods

A cross-sectional survey was conducted on 309 households sampled from 24 neighbourhoods in Khayelitsha Township. Data were collected through face-to-face interviews using a structured questionnaire administered to caregivers aged 18 years or older. Data were analysed by way of multilevel modelling using mixed effects logistic regression in Stata 11.

Results

The respondents had a median age of 33 years (inter-quartile range, IQR: 27.8-42.8) and majority (85%) of the respondents were women. The monthly income for the surveyed households ranged between R200 and R9,000 with mean of R2,257 (median of R1,500) and inter-quartile range (IQR) of R1,177–R3,337. We found sex and age of child, and severity of illness to be important individual-level predictors of healthcare seeking behaviour. Equally importantly, our findings also highlight the significant effect of neighbourhood-level characteristics on overall health outcomes. Nearly 20% of overall variation in healthcare seeking behaviour was attributable to unobserved neighbourhood-level factors.
Conclusions

Besides demonstrating the role that social capital plays in improving health outcomes, this study also showed that a significant amount of variations in health-seeking behaviour is attributable to unobservable neighbourhood effects within the same Township, over and above individual-level factors. As an implication for policy, this finding underscores the need for policymakers to be cognisant of the different neighbourhood-level contexts within intervention communities when designing, implementing and evaluating policies.
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CHAPTER 1: INTRODUCTION

Statement of the problem

High infant mortality

World over, nearly 8 million children died in 2010 before reaching the age of 5 (UNICEF, 2012). In developing countries alone, nearly 13 million infants and children die each year, with the majority of these deaths resulting from preventable diseases and other health causes (Mbagaya, Odhiambo, & Oniang’o, 1998).

The Millennium Development Goal number 4 sets a target of reducing under-five mortality rate by two thirds between 2009 and 2015. However, recent evaluation of progress against this benchmark highlights that, while most developed countries are either on track or have already accomplished the target, developing countries are still lagging behind (UN, 2011). On average, under-five mortality rate in terms of deaths per 1,000 live births stood at 66 in the developing regions and only 7 in the developed regions. In Sub-Saharan Africa under-five mortality rate in 2010 was at 129 deaths per 1,000 live births; 69 in Southern Asia; 80 in North Africa; and 23 in the Latin America and the Caribbean. This is a typical illustration of the high sensitivity of child health outcomes to regional and socioeconomic differentials.

Figure 1: Under-five mortality rates in the year 2010 (deaths per 1,000 births)

Source: 2011 Millennium Development Goals Report
In South Africa, although different magnitude of statistics are reported because of survey design issues, three separate surveys (that is, the 1988-1992 Human Science Research Council Survey; the South Africa Demographic and Health Surveys for 1998 and for 2003) demonstrate that indicators for early childhood mortality have been deteriorating since 1990s. By 2003 the estimated mortality rates for children falling in the age groups 0-4, 5-9 and 10-14 were as high as 58, 49 and 33 per 1,000 live births, respectively (Department of Health, Medical Research Council, & OrcMacro, 2007). Figure 1 below shows trends in child mortality rate in South Africa from 1980s to 2000 as reported by the 1988-1992HSRC, the 1998SADHS and the 2003SADHS.

Figure 2: Child mortality trends in South Africa since mid-1970s as reported by three separate surveys the 1988-1992 HSRC, the 1998 SADHS and the 2003 SADHS

Source: Department of Health


“Where you live makes a difference to your health over and above who you are” -(Jones & Moon, 1993; Robberts, 1999; Berkman and Kawachi, 2000; McIntyre, 2000; cited in Subramanian et al., 2003: 65)

The above quote resounds with the fact that the differentials in health outcomes exist not only across international frontiers, countries, cities and neighbourhoods but also within them. Within the City of Cape Town, despite being neighbouring suburbs, Khayelitsha and Mitchell’s Plain display very
contrasting indicators of health outcomes. Infant mortality per 1,000 births for instance is as high as 35 in Khayelitsha while only 19 in Mitchell's Plain. Khayelitsha community experiences the highest mortality burden among Cape Town sub-districts. For example, the age-standardised broad-cause mortality rate in Khayelitsha (at 1,684.8 deaths per 100,000) is more than twice that of the Southern sub-district (at 685.1 deaths per 100,000). Similarly, age-standardised mortality in Mitchells Plain is at 1,125.3 deaths per 100,000 second to Khayelitsha (MRC, DoH, & UCT, 2006).

Figure 2: Cape Town’s age-standardised mortality rate for broad cause groups by sub-district, 2006

Over the years health research have tended to focus on biomedical- and genetics-related determinants in an attempt to understand such health differentials (Marmot & Wilkinson 2006; Kemenade 2003a; Ashley & Carney 1999; Rakodi 1999). Yet, focus on these determinants alone have failed to adequately explain why the gaps in health and well-being have kept on widening across and within regions (Wilkinson, 1996). This backdrop has prompted the shift of interest towards health research that incorporates non-medical factors in understanding structural causes of health differentials.
Urbanisation and the resulting segregation of neighbourhoods

UNICEF (2012) reports that every year the world’s urban population keeps on expanding by approximately 60 million people, and that most of this growth takes place in the developing world. It is projected that by the year 2050, 7 in 10 people will live in urban areas. Rapid urbanisation, poverty and exclusion add to the problems of high child morbidity and mortality in cities. An extensive international study on children has established that more than half a billion children in the developing world live in absolute poverty (Gordon, 2003). Further, the UNICEF (2012) reports that despite having low overall rates of urbanization, Africa has a larger urban population than North America or Western Europe, and more than 6 in 10 Africans who live in urban areas reside in slums (UNICEF, 2012).

Rapid urbanisation presents various social and health perils. In developing countries’ cities the rate of urbanisation usually outpaces the capacity of local governments to provide the essential infrastructure and services to ensure health and well-being of children and families living in poor urban communities. This in turn exacerbates the social and related problems including illegality of informal settlements; deterioration of living conditions; heightened race-, ethnicity- and gender-based exclusion and deprivation; restricted people’s participation in decision-making processes; and increased inadequacies in households’ and communities’ assets. Gordon (2003) further adds that children living in informal urban settlements are particularly more vulnerable to poor health.

In South Africa the coastal city of Cape Town is among the places that have experienced rapid growth in number of informal settlements and shacks since 1990s due to rapid urbanisation. In 1993, for example, there were only 28,300 informal settlements. Yet this count had more than doubled to 59,854 by 1996. The number has since continued to steadily increase and by 2005 it had swollen to 98,031 informal settlements (City of Cape Town, 2006). Attributed to in-migration pressure, the biggest informal settlements are still found in Khayelitsha with a total of 13 informal settlements, containing over 42,000 shacks (City of Cape Town, 2006).

As part of a sustainable solution to the problem of urbanisation, and the social and health problems associated to it, it is acknowledged that informal settlements should be integrated into urban planning (United Nations, 2006). In an attempt to mitigate the informal settlement problem, the South African government in the first decade following change to democratic governance provided 1.5 million housing subsidies and infrastructure to Black South Africans (City of Cape Town, 2006). The City of Cape Town (2006) reports that by 2005 nearly 8.5 million people still lived without proper shelter, and the informal settlements has continued to expand, further perpetuating neighbourhood
health differentials. Ironically, there has been wide recognition over the years that simply the provision of technical assistance, financial or material resources is inadequate to address such problems (Marmot 2005; Kemenade 2002). It is therefore imperative to promote research towards increasing the understanding of the role that social capital factors play in finding solutions to problems of poor health, material deprivation and inequitable access to healthcare between and within regions and neighbourhoods. Health-seeking behaviour is a way in which populations interact among themselves and with health system. Understanding the patterns of healthcare seeking among households across different neighbourhoods can contribute to the development of community-responsive health policies that promote equitable access to health care for children and their families – regardless of the place where they live.

Health-seeking behaviours, social capital and child health

Caregivers’ health-seeking behaviour in terms of choice of healthcare providers when their children become ill and how soon they make such decisions have a bearing on access to health care and ultimately on the burden of disease and levels of child mortality. Health-seeking models have demonstrated the interplay of diverse social determinants at different levels (including both cognitive and non-cognitive factors at individual, household, community levels) in shaping households’ healthcare-seeking decisions. Social determinants in general, and social capital in particular, are among the areas that are increasingly being acknowledged as being pertinent in influencing health outcomes (Knack & Keefer, 1997; Pickett & Pearl, 2001). Understanding social capital determinants of healthcare-seeking behaviour in the context of neighbourhoods or local area characteristics within urban settings can help inform the development of health policies that are more responsive to the needs of local populations.

Theoretical and empirical literature

Over fifty (50) print and electronic literatures on health and health-seeking behaviour, social capital and multilevel (contextual) modeling were systematically reviewed and referenced in an attempt to establish the research gaps and to inform the design of the proposed study. Electronic literatures were sourced using search engines and referencing databases that included PubMed, MedLine, Google, Google Scholar, and government websites. The following section presents a summary of conceptual and empirical evidence established from the reviewed literature about the study theme.
The concepts of health and healthcare

The definition of health has been evolving over time. For the purpose of the proposed study, health is defined as per World Health Organisation (WHO) definition. The WHO defines health as “a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity” (WHO, 1948). There are other generally accepted definitions of health. For example, Bircher (2005) defines health as “a dynamic state of well-being characterized by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility.” On the other hand, Saracci (1997) defines health as “a condition of well-being, free of disease or infirmity, and a basic and universal human right.”

There has been some critique to the WHO (1948) definition. Critics of the WHO definition point out the lack of ‘happiness’ in the definition. Much more recent definitions have attempted to broaden the scope to include this. Another critique holds that the WHO definition of health is rigid and unrealistic, and that the use of the term ‘complete’ in the definition makes it highly unlikely that anyone would be healthy for a reasonable period of time.

Hence some alternative definitions have been suggested. For example, Becker’s (1974) and Bircher’s (2005) definitions attempt to take into account the changing health needs in relation to culture, an individual’s age, and personal responsibility. Another definition by Saracci (1997) attempts to provide an intermediate concept that links the WHO definition to issues of human rights, equity, and justice. These and other definitions introduce valuable concepts aimed at improving the current WHO definition of health. Health care on the other hand involves the maintenance and restoration of both physical and mental aspects health through prevention, diagnosis and treatment, and constitutes all the efforts by an individual aimed at achieving this. Health care can be either preventative or therapeutic. These components can be further categorised into primordial prevention, primary, secondary and tertiary levels of care. Primordial prevention aims at restricting the development of unhealthy lifestyles and hazardous environmental conditions while primary care level targets on healthy individuals to prevent occurrence of new illness. At secondary and tertiary levels of care, interventions are aimed at diagnosis and treatment of individuals already with disease and preventing or minimising impairment or disability (Joubert & Ehrlich, 2007).

For the purposes of the proposed study, focus will be on the curative aspect of care seeking in that it will consider provider choices of parents and caregivers whose children become ill prior to or at the time of the interview. Household’s care provider choices varies by region, socioeconomic and other factors. In the context of South Africa, health care providers can be categorised under public and
Models for health-seeking behaviour

Broadly put, health-seeking behaviour involves the interaction of populations and individuals with the health system. Health-seeking behaviour can be defined as any actions taken by individuals in response to their perceived or experienced ill health in an attempt to appropriately address the problem or find a solution (Ward, Mertens, & Thomas, 1997). It involves decision making processes that are governed by not only behaviours at individual and household level, but also by contextual community norms and expectations and characteristics. It is also influenced by behaviour of actors or care providers on the supply side. Both cognitive and non-cognitive factors come into play, making healthcare-seeking behaviours heterogeneous across contexts. This makes contextual analysis of care seeking behaviour an important approach. Therefore, biological symptoms in individuals and other client-based factors, provider-based behaviours and factors, socioeconomic and demographic factors, social networks all interact to produce a pattern of health seeking behaviour (Ryan, 1998).

Health-seeking behaviour models help in exploring the interactions between health systems and their target populations. Health-seeking behaviour models can be useful for breaking down the usually complex human behaviours into variables that help to understand household’s health-seeking patterns, the factors influencing them and how best health system interventions can be realigned to appropriately respond to these. The following healthcare-seeking behaviour models informed the development of variables for the proposed study: i) the Health Belief Model, ii) the Theory of Reasoned Action, and iii) the Socio-Behavioural Model.

The Health Belief Model is among the oldest approaches used in behavioural sciences (Hausmann-Muela, Ribera, & Nyamongo, 2003). This model holds that an individual’s response to care-seeking is primarily based on their beliefs. These beliefs can relate to perceived risk to a given disease, perceived severity of an illness, perceived benefits if care is sought and perceived obstacles. The beliefs or perceptions are influenced by either demographic or psychological factors including age, gender, and religion as well as by the psychological characteristics. The beliefs are reinforced through cultural norms, religion or advice from friends and relatives. The Health Belief Model has been critiqued on grounds that it overlooks other significant factors to care-seeking behaviour such as one’s previous experiences of illness. However, by highlighting the role of beliefs and perceptions,
this approach is useful in helping design appropriate health education programs and media campaign strategies that target myths and beliefs as a way of improving access to health.

Another model is the Theory of Reasoned Action. As the name suggests, this model contends that individuals respond to health care in a planned manner due to influence of perceptions as well as the desire to conform to societal expectations. In other words, this model serves as an extension of the Health Belief Model in that it considers individuals as largely influenced by their perceptions but it also adds that individuals assess their actions by considering what other people who live around them would perceive of their actions. Therefore there is a component of personal motivation to fulfil the expectations of social networks and other people that an individual lives with. Further, like the Health Belief Model, the Theory of Reasoned Action contends that care seeking is affected by socio-demographic and personality characteristics, with policy implications being that understanding the beliefs would help develop appropriate health responses to influence access to health care. Campbell points out practical applications of the Theory of Reasoned Action model in South Africa giving examples of sex workers awareness programmes. Using this approach, some health projects aimed at increasing HIV/AIDS awareness and prevention among sex workers made use of trained sex workers to disseminate health information among their networks.

Also called the Andersen Model, the third model considered by this study is the Socio-Behavioural Model by Andersen. This model postulates that care-seeking behaviour can be analysed as logical sequences of factors (Andersen & Neuman, 1975). In this model, all the factors affecting utilisation of health care are arranged into sets that are logically connected. Initial factors are called predisposing factors, which lead to enabling factors which in turn influence need factors. The need factors ultimately influence health care utilisation. Examples of predisposing factors include age, gender, education, religion, previous experiences of an illness, general attitudes towards health services and knowledge about the illness. Similarly, enabling factors would constitute availability of care services, income, availability of medical schemes and health insurance, social networks and family support, while need factors would include individual’s perception of severity of an illness, number of sick days spent in bed or number of days missed from work. Initially developed to study the use of biomedical health services, the Socio-Behavioural Model has been adapted over time to incorporate the broader health system issues (Hausmann-Muela et al., 2003). For example, health utilisation has been further broken down into sub-categories of types of available care providers. In the context of South Africa, these would include traditional and faith healers, modern practitioners, drug stores, self-medication of non-prescribed drugs or no treatment. The figure below shows an extended Socio-Behavioural Model as adapted by Kroeger (1983).
Figure 3: The extended health care utilisation model breaks down health care utilisation into different care provider choices

Source: Hausmann-Muela et al. (2003)

The Grossman’s model of demand for health and health care

Grossman’s (1972a, b) work is among the fundamental contributions to the theory of demand for health and health care. His work has been used as a framework for analysing health issues and designing policies to address socioeconomic determinants of inequalities in health (Wagstaff, 1986). Among Grossman’s models include the pure consumption, pure investment and the generalised models for demand for health and health care. He made a distinction between the demand for health and that for health care. He presented the demand for health care as a derived demand, that is, it is derived from the individual’s desire to accumulate health in itself (Grossman, 1972a, 1972b, 2004).

According to Grossman, every individual acts as both a producer and a consumer of health. Individuals demand for health for both consumption motives, because they gain utility from being healthy; and for investment motives, because health is durable like any other capital good disposed to depreciation. This distinguishes health from other market commodities in that individuals allocate resources and time in order to both consume and produce health. They invest in health by trading off their time and resources in the form of, for example, having nutritious food, immunisation, avoiding activities and engaging in exercise. Therefore, when an individual invests in health now they expect fewer sick days, more productive days and higher income in the future. At the same time individuals consume part of their current health by obtaining utility from being healthy.
Grossman acknowledged that the demand for health is influenced by medical, sociological and epidemiological factors (Grossman, 2004). His model also highlights age, education and income as being among important predictors of demand for health and health care. He argued that these factors are used to determine the optimal level of health that an individual will demand. His model postulates that the demand for health decreases with age and increases with income and education, and that the demand for health care increases with income. He however pointed out the ambiguity of the impact of age and education on the demand for health care. Grossmann’s model can be used to make estimates of the effects of changes in income, age, technological changes, prices of health care and other commodities on the demand for health and health care. The optimal level of investment in health occurs where the marginal cost of health stock is equal to the marginal benefit. An individual, therefore, determines their optimal level of demand for health care at a point where the marginal cost equals the marginal benefit (that is, the cost of maintaining health equals the expected future returns in the form of income, prevented sick days and utility).

While Grossman’s model has been used as a centre piece for analysing demand for health care, empirical tests have yielded mixed results. For example, an empirical investigation of his model by Gerdtham & Johannesson (1999) using huge national datasets from Sweden revealed some discrepancies in results with those predicted by Grossman. Gerdtham & Johannesson (1999) however pointed out that these could have been due to methodological approaches used in the definition and measurement of health status. They pointed out that since health status is intangible, it poses measurement challenges and hence is a potential cause of the inconsistent results. They attempted to overcome this by using a combination of complimentary methods for measuring health status – using a mix of continuous measures based on the rating scale method; the time trade-off method; and a categorical measure of overall health status (Gerdtham & Johannesson, 1999). With this they reported the categorical method as yielding more consistent findings with the predictions of Grossman’s model.

Another empirical investigation of Grossman’s model by Wagstaff (1986) showed different signs between education and demand for health care contrary to Grossman’s model postulations. Grossman predicts that since better-educated individuals are more efficient producers of health, the coefficient on education in the structural demand for medical care model should be negative in that such individuals require fewer units of time and medical care inputs to produce an additional unit to their health stock compared to their less educated counterparts. When Wagstaff (1986) analysed this using large American datasets a positive coefficient yielded instead.
In spite of some discrepancies in the follow-up empirical testing of Grossman’s model by others, it remains an important piece of work especially that it highlights important correlates of social factors such as years of formal education with good health. Grossman (2004) had gone further to support his deduction that, regardless of the measurement levels used - morbidity rates, mortality rates, self-evaluation of health status, or physiological indicators of health - and education is positively associated with health outcomes. He argued that this applies whether the units of observation are individuals or groups, and that there exists a causal relationship between increased schooling and improved health outcomes (Grossman 2004).

**Social capital: definition and concepts**

Social capital is a multidisciplinary concept that refers to social networks, the sense of reciprocity and belonging, tolerance, interpersonal trust and norms and values that result from interaction of people (Putnam 1995; Putnam 2000; Woolcock 1998). Early applications of the concept of social capital can be traced back to the 19th century (The World Bank, 2002). However, it was not until the recent few decades that the concept has had renewed interest in terms of how it is associated with social and economic outcomes. The works of individuals such as Jacobs (1961), Bourdieu (1983), Coleman (1988), Putnam et al. (1993) and Putnam (2000) in particular helped to revive this interest. Through the publication of *Bowling Alone*, for example, Putnam(1995) used various social capital indicators to demonstrate the link between declining levels of civic engagement in the United States and the political and economic performance. In this publication he demonstrated that democracies work better when there are long-standing traditions of civic and political participation.

At community level, family, friends and networks serve as important assets that households draw upon to solve problems, and also leverage to enjoy for their own sake (Narayan, 1997). Studies have showed that communities endowed with rich stock of social networks and civic associations are more likely to confront issues of poverty and vulnerability (Putnam et al. 1993). Social capital has also been demonstrated to positively correlate with education and health outcomes, and negatively with crime. For example, using a composite measure of child welfare that included teen pregnancy, infant mortality and a variety of other indicators of child wellbeing, Woolcock (1998) demonstrated that there is a very strong association of social capital with child health.

The proposed study identifies social capital in terms of membership to local institutions, family structure, and formal and informal networks of friends and extended family ties, issues of governance, interpersonal trust, trust in institutions, and community norms and values.
Social capital and access to health care

The concept of access to health care is widely used by national governments to demonstrate their commitment and aspirations towards implementing health policies that are all-inclusive. The mission statement for the Ministry of Health in Zambia, for instance, states that its goal is “to provide equitable access to cost-effective, quality health services as close to the family as possible” (MoH Zambia, 2012). Similarly, for South Africa, the policy document for the proposed National Health Insurance (NHI) states that the reforms to be brought are inclined towards promoting “…equity and efficiency so as to ensure that all South Africans have access to affordable, quality healthcare services regardless of their socioeconomic status” (DoH, 2011).

However, being a multifaceted concept, the definition of ‘access’ varies depending on schools of thought. Some schools of thought emphasise the supply aspect in their definition highlighting the provision of infrastructure, personnel and medical supplies (Guagliardo, 2004; Perry & Gesler, 2000). Other paradigms such as contended by Falkingham (2004) focus on the demand side. The conceptual framework of this study acknowledges the demand-supply side debates and incorporates the three dimensions of access namely: availability, affordability and acceptability as presented by McIntyre et al. (2009).

McIntyre et al. (2009) present the three dimensions highlighting that access is the ‘degree of fit’ between the responsiveness of a health system’s service provision and community’s needs. They also highlight the cross-cutting role of empowerment and that this is achieved through increasing knowledge and information. With this definition, the level of access is said to be inequitable if there exists systematic preventable differences between communities with different geographical or social disposition (Braveman, 2006; Cleary, Birch, Moshabela, & Schneider, 2012). Using McIntyre et al.’s (2009) framework, the proposed study will demonstrate the potential areas of association with and contribution of social capital towards improving access to health care for children.

The framework of this study presents the supply side as an aspect of the health system concerned with ensuring availability of health care service through provision of infrastructure, staff, drugs and other medical supplies, both formal and traditional. On the other hand the demand side refers to the capacity of households and communities to accept and utilise the services. Therefore, as argued by Cleary et al. (2012), access does not imply utilisation but rather the opportunity to do so through empowerment, which is affected by levels of need for care, which is in turn affected by level of one’s health status. The proposed study also postulates that access is affected by social capital variables:
levels of trust in institutions, culture, expectations, and income, all of which form the community and household social capital.

Social capital, therefore, is part of the social determinants or what has been referred to by McIntyre et al. (2009) as ‘multiple layers of underlying issues’ that help to defuse the unequal power relations between the health system and households. This is so in that social capital helps to strengthen information communication and interaction between the demand and the supply sides of the health system. Since social capital is defined in the context of trust, strong networks and family ties, civic and political participation, it would be expected, for example, that communities with stronger levels of trust are more likely to have higher confidence in local institutions and hence improved utilisation of local health care services. This is supported by Knack & Keefer’s (1997) study on World Values Survey where results from 29 countries confirmed that societies with higher levels of interpersonal trust are more likely to consider public officials as trustworthy and their policy pronouncements as credible. Trusting societies are also associated with better performing public institutions (R. D. Putnam, 1993). Similarly, advice obtained within social networks can shape health care decision-making. When analysing household care-seeking behaviours within the social contexts, Freidson (1959) and Polgar (1963) noted that when individual become ill they engage in some informal interactions with their neighbours, friends and co-workers in an attempt to obtain advice on treatment options.

In the final analysis, overall stronger social capital within neighbourhoods is postulated to strengthen household’s access to health care by bridging the demand-supply gap through increased interactions within the health care system. Adapted from McIntyre et al.’s(2009) framework, figure 4 below demonstrates the proposed study’s model of relationship of access to health care and social capital. The proposed study has also incorporated procedures for collecting and analysing conventional data on availability, affordability and acceptability and part of the explanatory variables associated with health care seeking patterns.
Social capital and early childhood development: the Lifecourse perspective

In spite of significant global overall improvements in health indicators (such as infant morbidity and mortality and life expectancy at birth) over the years, marked differences between groups and regions have continued to persist – with some groups and regions experiencing deterioration (Smith, 2003; UNICEF, 2012; Wadsworth, 1997). The Lifecourse perspective is one of the frameworks used to understand how exposure to certain structural, social, cultural and physical environments in early life propagate such differentials among groups throughout the course of life, and even extending into generations. This approach puts into context an individual's life history and early events and how these influence future health and wellbeing. In disease epidemiology, Ben-Shlomo & Kuh (2002: 290) define Lifecourse as “a study of long term effects on chronic disease risk of physical and social exposures during gestation, childhood, adolescence, young adulthood and later adult life.”
Part of the contribution to the Lifecourse perspective emanates from cohort studies conducted during the post Second World War periods. With increasing incidence of, for example, Bronchitis and other lower respiratory health problems, studies began to quickly associate these with increased atmospheric pollution resulting from industrialisation and smoke from the coal mines. Passing of the Clean Air Act of 1956 in Britain led to improved levels of atmospheric pollution (Hall, Parker, & Webb, 1975). Yet traits of respiratory infections among the population continued. Then careful analysis of migration patterns through cohort studies revealed strong correlation between risk of lower respiratory infection and adults who were exposed to such conditions in childhood, showing strong evidence of adults pre-exposed in childhood as being more at risk. Other studies using data on migration and regional trends in mortality confirmed that biological risk of raised blood pressure and chronic obstructive airways diseases were likely to be established in early life (Barker, 1991; Hibbert, Hudson, Lanigan, Landau, & Phelan, 1990; Reid, 1969). Another study attempted to illustrate the Lifecourse effects using child’s height as a measure of progression of growth reflecting household’s level of nutrition and socioeconomic predisposition on the child and its influence social standing later in adult life. Findings of a 1958 British longitudinal study using birth cohorts showed that childhood health potential in terms of height at age 7 years was associated with raised risk of unemployment in early adult life (Montgomery, Bartley, Cook, & Wadsworth, 1996).
However, some limitations have been highlighted with the Lifecourse approach. Among them include differing lengths of exposure and the associated complexity of analysing the interrelationships and contribution of biological and social factors. This is further compounded by unavailability of birth cohort data with both biological and social measures especially in developing world (Ben-Shlomo & Kuh, 2002). The approach has also been critiqued on grounds that the current evidence is inadequate and needs further exploration.

Despite these short falls, the Lifecourse approach serves as a fundamental framework for analysing poverty, deprivation and inequalities in health. The Lifecourse framework has informed the justification of this proposed study’s emphasis on the need to place children at the centre in health research, more so research on social factors and healthcare seeking for children. As Wadsworth (1997) puts it, the chances of reducing health inequalities for any given generation are higher if interventions are implemented early in one’s life.

Empirical investigation of determinants of care seeking

Evidence has largely conformed to theory about factors affecting health care seeking behaviour. Among notable variables used to analyse factors affecting the demand for health care include age, education, household income and cost of treatment. Other factors are distance to facility, number of symptoms presenting and perception of severity of illness.

Despite consensus on theory with empirical evidence, various studies have been yielding different magnitude and sometimes different signs of correlation coefficients of some of the key variables. This section presents some of results of literature reviewed.

With regards to income, a study on determinants of health seeking behaviour using the National Household Survey (NHS) data in Uganda reaffirmed that income is strongly associated with increased health care utilisation. Increased income was positively associated with demand for health care. This applied across all age groups especially for women (Lawson, 2004). Further, women were more sensitive to changes in treatment costs than their male counterparts. Using a discrete choice model, this Uganda study also discovered age, gender and increasing levels of education to be associated with a shift of demand away from public health facilities. The study assumed the shift to be an indication that people regard services obtained from public health facilities as being of poor quality. Other studies that confirmed the positive association of care seeking and household income include Sreeramareddy et al. (2006) and Dzator & Asafu-Adjaye (2004). Interestingly, findings by Akin and Hutchinson (1999) showed households even by bypassing closer facilities in preference to distant ones if they perceived distant ones to offer higher quality of service. On the contrary, analysis by
income groups by Li (1996) in Bolivia, and also by Alderman and Gertler (1989) in Pakistan found wealthier households to be more inelastic to changes in treatment costs. Similarly, Pillai et al. (2003) in their study in Kerala, southern India, discovered that families with a higher incomes sought care less often particularly for milder illnesses. They realised that this could have been due to the fact that such families had sufficient resources to obtain care later if the illness failed to resolve on its own.

On treatment costs, evidence in general shows that increasing the cost of, say consultation and drugs decrease the demand for health care especially among poor households. For instance, a study by Ngugi (1999) in Kenya found that the introduction of user fees reduced the utilisation of public health services. Many other studies have supported the negative implication of user fees on access to health care (Geest et al., 2000; McIntyre et al., 2009). The South Africa demographic and Health survey also reported cost and distance as among major factors impeding access to health care, particularly among women (Department of Health et al., 2007). In the same survey over half of the women aged 15-49 years reported either treatment cost or distance as being the major problem affecting their access to health care when they were sick. However, there also have been conflicting findings among some non-African countries. Notable are the World Bank-supported study in the Philippines and another study in Benin whose findings suggested that there was relatively little impact of treatment cost on the demand for health care (Akin, Guilkey, Hutchinson, & McIntosh, 1998; World Bank, 1987).

As for distance, evidence on the impact of distance to health facility is less mixed and has commonly been found to be an important factor associated with decreases in health care demand. The negative impact of distance to facility on utilisation of health services has been confirmed by Lavy & Quigley (1995) for Ghana and Appleton (1998) for Kenya.

Gender is another important determinant of care seeking. Gender disparities in access to health services have been studied in a number of contexts. It is assumed that the opportunity costs of seeking healthcare faced by women are higher than for men, thus deterring them from accessing health services. For example, Mwabu et al. (1994) found that both distance and user fees reduced demand for health care, but men were less constrained than women. Gender and age of the sick child are additional factors in influencing care seeking by parent or caregiver. A study in Kenya for instance observed trends towards increased public facility use for boys compared to girls although not statistically significant (Burton et al., 2011). Similarly in the same study, when compared to under-five children, older children had generally less health care utilisation.
As for the number of symptoms presenting in the child, studies such as by Sreeramareddy et al. (2006) established that mothers were more likely to seek professional care from public or private facility for their children when the child presents more than one symptom.

In terms of education and care seeking, there seems to be more mixed findings. Although education is widely accepted as a very important determinant, Dor and Gaag (1987) and Behrman (1984) found no significant effect on the decision to choose a professional health care among more educated respondents in Nicaragua. However, the positive association of education and care seeking has been supported and confirmed by many other studies including Sreeramareddy et al. (2006) and Dzator & Asafu-Adjaye (2004) in Ghana.

Finally individuals’ perception of severity of illness is associated with increased utilisation of health care. A study by Burton et al. (2011) on febrile illness in Kenya and another study on malaria provider choice in Ghana by Dzator & Asafu-Adjaye (2004) both confirmed that perception of severity of illness is associated with higher levels of health care utilisation. Further, severity of illness itself also matters. It has been established that individuals who are seriously ill are more likely to travel further to seek care than those who are less ill (Akin & Hutchinson, 1999; Dzator & Asafu-Adjaye, 2004).

Rationale of the study

The rationale of the proposed study is threefold. Firstly, this study will focus on children. According to the Lifecourse approach to analysing health inequalities, the quality of life of a child influences their risk to disease and death in their adulthood. That is to say, disease in adulthood is a cumulative effect of many incidences, some of which occur in infancy and childhood (M. G. Marmot & Wilkinson, 2006; Smith, 2003; Wilkinson, 1996). Therefore focusing on the child is one of the effective ways of sustainably addressing the structural causes of inequalities in health in adulthood. In addition, international conventions recognise that children in poor settings equally have full range of rights as their counterparts in the developed world. Among the most ratified children’s rights instruments, for instance, include the Convention on the Rights of the Child. Article 6 of this Convention commits States parties to “ensure to the maximum extent possible the survival and development of the child.” Further, Article 24 refers to every child’s right to the “enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health.” The Convention urges States parties to “ensure that no child is deprived of his or her right of access to such health care services” (UNICEF, 2012). The health of a child has been the centre of global health targets including Millennium Development Goals 2009-2015 (UN, 2011). In many family
settings children’s well-being is largely dependent on the decisions that their parents or caregivers make. This study puts focus on the child by collecting health-seeking data of their parents and caregivers.

Secondly, the study will make a contribution to the existing body of knowledge through a rigorous methodology that attempts to adequately bring out fundamental relationships and patterns in the analysis. The study will attempt to establish the influence hierarchical, contextual, neighbourhood-related characteristics versus household factors that are associated with parents’ health care seeking practices when their children become ill. This will be possible through the use of multilevel modeling.

Finally, while many studies of social capital have been conducted in the developed countries, the literature reviewed has shown inadequacies of such studies in the developing-country settings in general and South Africa in particular. For example, the literature search could not establish any previous studies on social capital and health-seeking behaviour that were conducted in the past decade in South Africa. Yet evidence shows serious limitations of generalising social capital study findings (and hence recommendations) from the developed world to the local developing country contexts (Kemenade, 2003b). Text box 1 gives a summary of the above points of knowledge gaps that the proposed study will attempt to bridge.

<table>
<thead>
<tr>
<th>Text box 1: Summary of study’s contribution to research gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The study focuses on children in line with global MDG targets and the UN Convention of Rights of the Child Charter, and is further informed by the Lifecourse approach that demonstrates that focusing on child’s wellbeing is an effective way of promoting health outcomes throughout an individual’s entire life.</td>
</tr>
<tr>
<td>• The study uses robust data collection and analysis techniques multilevel modelling- a to hierarchically model that enables analysis of household health care seeking behaviour for children within the contexts of different neighbourhoods.</td>
</tr>
<tr>
<td>• Literature reviewed showed research gaps on the role of social capital as a predictor of healthcare seeking behaviour in developing countries in general and South Africa in particular. This study highlights the importance of taking into account of social capital predictors of healthcare seeking as one way of helping bridge this knowledge gap.</td>
</tr>
</tbody>
</table>
Study purpose and objectives

**Purpose:** The purpose of this study is to investigate household social capital factors, within the context of urban neighbourhoods, which are associated with prompt and appropriate health-seeking behaviour of parents when their children become ill with common childhood illnesses, using the cases of Khayelitsha Township in the Western Cape Province, South Africa.

**Specific objectives:** The specific objectives of the study are to:

- Identify the types of social capital at household and community levels in Khayelitsha Township.
- Determine the households’ health care provider choices when their children become ill in Khayelitsha Township.
- Investigate the social capital factors associated with households’ choice of health care provider and promptness of health care-seeking for ill children in the context of different neighbourhoods in Khayelitsha Township.

Study conceptual framework, hypotheses and model specification

**Conceptual framework**

Health seeking behaviour is a decision making process starting from identification to prompt decision to seek care. Delay in seeking appropriate care and not seeking care has contributed to large child mortality in developing countries and this is influenced by myriad of factors. Integrated in this decision is prompt health seeking decision and appropriate health care. Therefore, prompt health-seeking and type of care provider chosen are used as the main outcome variables in this study. These care-seeking behaviours are assumed to be shaped by demographic, economic and social capital factors. Hence, the explanatory variables have been broadly categorised into two components (i) social capital, and (ii) demographic/socioeconomic.

Prompt healthcare-seeking behaviour is operationally defined as seeking care within 24 hours of being aware of one’s child’s illness (see *Text box 2*). The appropriate healthcare decision options for health-care providers include public or private sectors, chemist/pharmacy/shop, or from traditional and faith healers. Other options are seeking care from a dentist, self-medication and home remedies. Our study will also consider not seeking any care at all as an option but an inappropriate one.
**Text box 2: Glossary of key terms used in the study**

- **Neighbourhood:** A collection of households within a geographical demarcation that shares common social characteristics. For the purpose of this study, neighbourhoods will be aligned with Census Enumerator Areas (CEAs) with similar socioeconomic status (SES) index and density of informal settlements.

- **Child:** while the United Nations Convention on the Right of the Child defines a child as any individual aged 18 years or below (UN General Assembly 1989). However, for the purpose of this study a child is classified as an individual in the household aged 15 years or younger in order to align with the age-group categorisation used in the 2001 South Africa Population Census.

- **Household:** A group of persons who live together, and provide themselves jointly with food and/or other essential for living, or a single person who lives alone.

- **Common childhood illnesses:** Symptoms of all illness and injuries including, fever, acute respiratory infections, diarrhoea, measles, malaria and malnutrition as established by UNICEF as leading cause of child mortality in developing countries.

- **Prompt health care seeking:** Caregivers’ seeking health care within 24 hours of onset of an illness in a child.

- **Health-seeking behaviour:** Whether caregiver sought care, how soon and from whom care was sought the last time their child was ill.

- **Categorisation of type of health care:** Public sector, private sector, chemist, traditional healer, faith healer, dentist, self-medication of non-prescribed drugs, and no medication.

Explanatory variables are presented at two hierarchical levels – community/neighbourhood and household. Community-level social capital includes structures that promote inclusion and allow residents to participate in civic and political activity, interpersonal trust, trust in institutions, tolerance and diversity. They also include availability of structures such as civic and political institutions, churches, schools, health care facilities per catchment population within the community. On the other hand, household-level social capital is broken down into family structure, extended family and friends networks. Besides social capital, the study recognises important factors (including income, education, age and background characteristics). These have been broadly categorised as demographic and socioeconomic.

Further, the study’s conceptual framework recognises the underlying hierarchical nature of the neighbourhood context within which the households as study elements are embedded, and the
potential differentials in outcomes that may result from influence of neighbourhood–associated characteristics. Therefore two (02) levels are identified: the household being the lower level and community/neighbourhood at higher level in hierarchy. This is because two caregivers with similar household-level characteristics but drawn from different neighbourhoods may yield very different outcomes due to influence of neighbourhood-level characteristics. This has informed the choice of analysis techniques to be used. Figure 6 below presents the conceptual framework of the outcome variables that the study will focus on namely:- health care seeking decision, provider choice and promptness of care seeking.

Figure 6: Flow chart representing conceptual framework of study outcome variables

Model specification and hypotheses

This study acknowledges the socioeconomic differentials (e.g. high variations in density of informal settlements) among the clusters to be sampled and within which households as units of analysis are nested. The study therefore assumes a two-level hierarchy of data on factors associated with care seeking: – household-level factors and community-level factors. To appropriately deal with these, a multilevel modeling approach will be used. Multilevel analyses will integrate household-level
variables with cluster-level variables so that the influence of both levels is assessed simultaneously (Last, 2001).

The advantages of multilevel modeling are manifold. In the first place, this approach not only enables more statistically efficient estimates of regression coefficients, but it also provides more precise standard errors, confidence intervals and significant tests (Goldstein, Browne, & Rasbash, 2002; Goldstein, 1999; Snijders & Bosker, 1999). Further, multilevel models reduce the likelihood of committing Type I error by generating more ‘conservative’ estimates than traditional multiple regression models which ignore the effects of cluster-level characteristics. This problem of inflated the estimates in traditional models arises when relationships between variables are examined using data aggregated at the cluster level and yet conclusions are drawn at the individual level (Cho, 2003; I. Kreft & De Leeuw, 1998; Robinson, 2008). Therefore, ignoring the cluster effects by using traditional multiple regression techniques may compromise the strength of validity of the study’s results.

The use of multilevel modeling will allow for simultaneous exploration of the extent of the association of factors at both levels of the hierarchy by examining the within-cluster variance, between-cluster variance, and the intraclass correlation coefficients.

Figure 7: The study will use a two-level hierarchy model to analyse factors associated with care seeking behaviour

Through multilevel modeling, separate logistic regression models in each cluster will be analysed to compare the relationships between their parameters. Therefore, the influence of both household- and cluster-level factors will be examined by decomposing the total variances into within-cluster and
between-cluster components as stated above. The model specification for the proposed study is outlined in the subsequent section.

**Level 1 Model:** The first level’s model compares household characteristics as independent variables with health-seeking behaviour (HSB) as the dependent variable, where i indexes households and j indexes the clusters or neighbourhoods. HSB\(_{ij}\) is the response for a given household \(i\) in a cluster \(j\).

The outcome variables health-seeking behaviour (HSB) are three:

1. Health seeking behaviour that distinguishes between those who had sought care and those who did not.
2. How soon care was sought (promptness of healthcare seeking).
3. Type of provider where healthcare was sought from.

All these outcome variables will be expressed in binary form and therefore the level 1 logistic regression function for each will be:

\[
\text{Logit}(HSB_{ij}) = \beta_{0j} + \beta_{1j}\text{resp_mstat}_{ij} + \beta_{2j}\text{resp_edu}_{ij} + \beta_{3j}\text{resp_employ}_{ij} + \beta_{4j}\text{religion}_{ij} + \beta_{5j}\text{hh_income}_{ij} + \beta_{6j}\text{race}_i + \beta_{7j}\text{age_caregiver}_{ij} + \beta_{8j}\text{sex_child}_{ij} + \beta_{10j}\text{resp_age}_{ij} + \beta_{11j}\text{percep_ill}_{ij} + \beta_{12j}\text{exclusion}_{ij} + \beta_{13j}\text{trust_better}_{ij} + \beta_{14j}\text{memb_assoc}_{ij} + \beta_{15j}\text{vote}_i + \epsilon_{ij} \]

(Equation 1)

Equation 1 above implies that within each cluster/neighbourhood, the log odds (or associated probability) of a household’s care-seeking behaviour (HSB\(_{ij}\)) is a function of a parent’s age (Age), level of education (resp_edu), occupation of caregiver (resp_occup), gender of parent (sex_par), gender of child (sex_child), household income (hh_income), caregiver’s participation in community projects (particip), parent’s marital status (resp_mstatus), perception of severity of child’s illness (percep_ill), and experience of exclusion from social services (Exclusion), where \(\beta_0\) is the intercept corresponding to the log-odds of seeking care by an average household with a sick child in the cluster \(j\).

**Level 2 Model:** The second level’s model will take into consideration the differences between clusters and explain these in terms of neighbourhood characteristics. Cluster characteristics will constitute of the settlements in each cluster as defined by the 2003 SADHS. Equation 2 below shows that the intercepts from Level 1 (\(\beta_{0j}\)) will be modelled as a function of neighbourhoods (neighb); with a random effect (\(U_{0j}\)). This modeling means that within-cluster intercepts of may vary systematically with the above three variables.

\[
\beta_{0j} = \gamma_{00} + \gamma_{01}\text{neighb}_j + U_{0j} \\
\beta_{ij} = \gamma_{10} + \epsilon_{ij} \]

(Equation 2)
The contextual model: The contextual model is derived by substituting Equation 2 into Equation 1. The first part of the equation $(\gamma_00 + \gamma_{10} \text{Age}_{ij} + \gamma_{20} \text{Edu}_{ij} + \ldots + \gamma_{120} \text{Exclusion}_{ij})$ is the fixed part of the model that does not include random effect. Further, $\gamma_00$ is the average intercept, and $\gamma_{10}$ through to $\gamma_{110}$ and $\gamma_{01}$ and $\gamma_{02}$ are the average regression coefficients of the predictors. The rest of the model $(U_0j)$ is the random part that only consists of random effect. The specification for the contextual model is shown below:

$$
\text{Logit(\text{HSR}_{ij})} = \gamma_00 + \gamma_{10} \text{resp_mstat}_{ij} + \gamma_{20} \text{resp_edu}_{ij} + \gamma_{30} \text{resp_employ}_{ij} + \gamma_{40} \text{religion}_{ij} + \gamma_{50} \text{hh_income}_{ij} + \gamma_{60} \text{race}_{ij} + \gamma_{70} \text{hh_income}_{ij} + \gamma_{80} \text{age_caregiver}_{ij} + \gamma_{90} \text{sex_child}_{ij} + \gamma_{100} \text{resp_age}_{ij} + \gamma_{110} \text{percep_ill}_{ij} + \gamma_{120} \text{exclusion}_{ij} + \gamma_{130} \text{trust_better}_{ij} + \gamma_{140} \text{memb_assoc}_{ij} + \gamma_{150} \text{vote}_{ij} + \gamma_{160} \text{neighb}_{ij} + U_0j.
$$

Model interpretation and testing: This multilevel regression function will then be interpreted in terms of log odds corresponding with the coefficients $\beta_{ij}$ for a given predictor $X_{ij}$ holding others constant. One of the methods by which the model will be tested will be through inclusion and exclusion of different sets of random and fixed effects such as the intercept and predictors at both household and cluster/neighbourhood levels. Another method will be by examining clustered data using the intraclass correlation, which is a measure of the degree of dependence of households belonging to the same cluster or the proportion of total variability that is due to the cluster level influence. The higher the intraclass correlation the more likely households are to share common outcomes. For example, using the null hypothesis that there is no difference between different clusters (i.e. $H_0: \tau_{00} = 0$), covariance between households in the same clusters and the presence of hierarchical influence of cluster characteristics will be tested using within-cluster/neighbourhood variance, between-cluster/neighbourhood variance and the intraclass correlation coefficient given by:

$$
\rho = \frac{\tau_{00}}{(\tau_{00} + \sigma^2)} = \frac{\tau_{00}}{(\tau_{00} + \pi^2/3)}
$$

Where $\rho$ is the intraclass correlation coefficient, $\tau_{00}$ is the between-cluster/neighbourhood variance, and $\sigma^2$ the within-cluster/neighbourhood variance. As applied in multilevel models, the within-cluster/neighbourhood variance $\sigma^2$ will be fixed to $\pi^2/3 = 3.29$ (T. A. B. Snijders & Bosker, 1999).
**Expected signs of model coefficients:** The estimated coefficients of the predictor variables will indicate how changes in each of the variable affect household care seeking. The signs on the coefficients will show the direction of the odds of making such decisions. Based on reviewed literature, this study hypothesizes that the signs of the coefficients of predictor variables will be as summarised in Table 1 below.

Table 1: Expected signs of coefficients of model’s predictor variables

<table>
<thead>
<tr>
<th>Variable definition</th>
<th>Variable name abbreviation</th>
<th>Variable type</th>
<th>Response categories</th>
<th>Expected sign of coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status: Caregiver’s marital status</td>
<td>resp_mstatus</td>
<td>Binary</td>
<td>0 = Not unmarried 1 = Married (Comparison category: Married)</td>
<td>Positive</td>
</tr>
<tr>
<td>Education: Highest level of education attained by caregiver</td>
<td>resp_educat</td>
<td>Binary</td>
<td>0 = Primary or no formal education 1 = At least secondary or higher level of education (Comparison group: Secondary or higher level of education)</td>
<td>Positive</td>
</tr>
<tr>
<td>Occupation: Whether caregiver is employed or not</td>
<td>resp_employ</td>
<td>Binary</td>
<td>0 = Unemployed 1 = Employed (Comparison group: Employed)</td>
<td>Positive</td>
</tr>
<tr>
<td>Religion: Caregiver’s religion</td>
<td>religion</td>
<td>Binary</td>
<td>0 = Non-Christian 1 = Christian (Comparison category: Christian)</td>
<td>Positive</td>
</tr>
<tr>
<td>Income: Household level of income</td>
<td>hh_income</td>
<td>Numerical</td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Ager: Age of sick child</td>
<td>age_child</td>
<td>Numerical</td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Gender: Child’s sex</td>
<td>sex_child</td>
<td>Binary</td>
<td>0 = Girl 1 = Boy (Comparison category: Boy)</td>
<td>Positive</td>
</tr>
<tr>
<td>Illness severity: Caregiver’s perception of the severity of child’s illness</td>
<td>perp_ill</td>
<td>Binary</td>
<td>0 = Not severe 1 = Severe (Comparison category: Severe)</td>
<td>Positive</td>
</tr>
<tr>
<td>Exclusion: Whether caregiver ever experienced exclusion from health services</td>
<td>exclusion</td>
<td>Binary</td>
<td>0 = No 1 = Yes (Comparison category: Yes)</td>
<td>Negative</td>
</tr>
<tr>
<td>Trust: Caregiver’s perceptions of whether the level of trust in the community has gotten better over the last few years.</td>
<td>trust_better</td>
<td>Binary</td>
<td>0 = No 1 = Yes (Comparison category: Yes)</td>
<td>Positive</td>
</tr>
<tr>
<td>Membership in associations: Whether caregiver or someone in the household is a member of community groups, organisations or association</td>
<td>memb_assoc</td>
<td>Binary</td>
<td>0 = No 1 = Yes (Comparison category: Yes)</td>
<td>Positive</td>
</tr>
<tr>
<td>Participation: Whether caregiver has jointly worked together in community projects</td>
<td>joint_work</td>
<td>Binary</td>
<td>0 = No 1 = Yes (Comparison category: Yes)</td>
<td>Positive</td>
</tr>
<tr>
<td>Democratic governance: Whether caregiver voted in previous elections at community of local</td>
<td>vote</td>
<td>Binary</td>
<td>0 = Did not vote 1 = Voted (Comparison category: Voted)</td>
<td>Positive</td>
</tr>
</tbody>
</table>
**Model assumptions**: The following assumptions are made about the model to be used:

- Household-level residual terms are independently distributed,
- Neighbourhood-level residuals follow a multivariate normal distribution,
- There is no correlation between household-level residuals and neighbourhood-level residuals,
- The sample size is fairly large.

These assumptions will be reconfirmed prior to data analysis.
CHAPTER 2: METHODS

Study design

The proposed study will be cross-sectional in design. The study’s outcome variable will be health-seeking behaviour and the explanatory variables will consist of demographic, socioeconomic and social capital characterises at household and cluster/neighbourhood levels.

Analysis will focus on the association of selected key social capital variables with health-seeking behaviours of caregivers of sick children as the key outcome variable. The selected social capital variables will be collected together with other important demographic and socioeconomic characteristics (including income, education and age) that have been documented as important in health care seeking behaviour (Grossman, 2004). Data will be collected through a structured questionnaire administered to parents and caregivers of children in Khayelitsha Township in the Western Cape Province.

Population and sampling strategy

Study population

The study population will comprise of all the households in the neighbouring sub-districts of Khayelitsha Township. Khayelitsha Township falls under the wider Mitchell’s Plain Magisterial District located on the Cape Flats about 30 km from the Cape Town central business district.

Khayelitsha community

Khayelitsha comprises of many sub-sections – the old, formal section on the one hand, and the newer informal settlements on the other hand. The old formal section comprises mostly of middle- and upper-working class populations (consisting of Khanya Park, Bongweni, Ikwezi Park, Khulani Park, Tembani, Washington Square, Graceland, Ekuphumleni and Zolani Park). Conversely, the newer settlements consist mostly of informal structures built around the older areas. These include Harare, Site B, Site C, QQ Section, Green Point, RR Section, Litha Park, Mandela Park, Makaza, TR Section, and Enkanini.

For the purpose of this study, this community will be categorised into strata aligned with the 2001 census enumeration boundaries. These strata are further be classified into one of the 5 informal settlement categories according to the 2003 South Africa Demographic and Health Survey.
(Department of Health et al., 2007). The map below shows the housing density classification of Khayelitsha community.

Figure 8: Map of Khayelitsha Township showing the household density in terms of percentage of informal dwellings as per enumeration area as defined in the 2001 census

(Source: City of Cape Town)

**Sampling strategy**

**Household survey (n=300)**

The study will be implemented through a household survey using a two-stage stratified cluster sampling. To facilitate this, the study population will be demarcated into strata according to 2001 census enumeration areas (CEAs). The CEAs are neighbourhoods each with about 50 and 200 households that share homogeneity in some characteristics such as housing type and size (SALDRU, Center for Social Science Research, University of Cape Town Population Studies Center, & University of Michigan, 2003). The rationale for using two-stage stratified cluster sampling is that it is both cost-efficient and will ensure drawing of representative sample given the vast spread of the study population (Crankshaw & Welch, 2001; Joubert & Ehrlich, 2007).
On sample size determination, literature on multilevel models presents different, and sometimes conflicting, methods and recommendations for establishing this. Among the widely cited sample size determination methods include Kreft’s (1996) rule of the thumb. Basing on simulation studies, she recommends ‘30/30’ as a rule of thumb sample size, in principle implying that a study employing multilevel modeling approaches should have at least 30 clusters each with about 30 subjects. However, while accepting this as a reasonable size especially if the study’s interest is in the fixed parameters of the model, Hox (1998) suggests that this sample size could be further modified to ‘50/20’ (implying 50 clusters each with 20 subjects) if the study’s interest is in cross-level interactions, or to ‘100/10’ (implying 100 clusters each with 10 subjects) if the interest is strongly in the random parameters, variance and covariance. This proposed study adopts the standard technique of using the desired precision, anticipated proportion and desired level of confidence in determining the sample size. An attempt has also been made to meet the minimum 30 number of clusters as per Kreft’s (1996) rule of the thumb.

Each of the clusters will be classified under one of the five (05) types of categories of settlements (see Maps 1 & 2 above). Then a total of 30 clusters will be randomly selected to represent each of the five (05) types of categories of settlements. These settlements are based on the percentage of informal dwellings in the CEAs and categorisation of socioeconomic index as classified by the 2003 South Africa Demographic and Health Survey (Department of Health et al., 2007).

Since the study requires 30 clusters, in each cluster 10 households will then be sampled from each cluster using systematic random sampling to arrive at a total of 300 households. The household sample size (n=300) was determined based on a desired precision level of 5%, an anticipated proportion among the outcome variables of 20% and a confidence interval of 95%. Initially, the minimum required sample size was established as 246 households. However, with reference to the Crankshaw & Welch’s (2001) Khayelitsha/Mitchell’s Plain study where the non-response rate was estimated at 20%, the proposed study has made a similar adjustment (22%) to factor for potential non-responses therefore increasing the final sample size to 300 households.

The following formula and parameters were used to determine the minimum required sample size (n) of the number of households to be included in the household survey:
Where:

\[ n \rightarrow \text{the minimum required sample size} \]

\[ p \rightarrow \text{the anticipated population proportion (estimated from previous studies at 20\%)} \]

\[ d \rightarrow \text{the desired precision on either side of the proportion (equal to 5\%)} \]

\[ z \rightarrow z\text{-score corresponding to the 95\% desired level of confidence (equal to 1.96)} \]

\[ n = \frac{p(1 - p)z^2}{d^2} \]

\[ = \frac{0.2(1 - 0.2)1.96^2}{0.05^2} \]

\[ = \frac{0.614656}{0.0025} \]

\[ = 245.8 \approx 246 \]

Table 2: Proposed cluster and household sample size allocation

<table>
<thead>
<tr>
<th>Community</th>
<th>Cluster characteristics (informal settlements)</th>
<th>Number of clusters (N)</th>
<th>Minimum required # of households per cluster</th>
<th>Final # of households per cluster after oversampling to factor for none-responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Khayelitsha</td>
<td>0-20%</td>
<td>6</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td>2. Khayelitsha</td>
<td>21-40%</td>
<td>6</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td>3. Khayelitsha</td>
<td>41-60%</td>
<td>6</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td>4. Khayelitsha</td>
<td>61-80%</td>
<td>6</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td>5. Khayelitsha</td>
<td>81-100%</td>
<td>6</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>( n = 30 )</td>
<td>( n = 300 )</td>
</tr>
</tbody>
</table>

Measurement

Instruments

**Structured household survey questionnaire.** This will be used to conduct face-to-face interviews with parents and caregivers in the sampled households. The purpose of the questionnaire is to capture variables on demographic, socioeconomic and health characteristics required to meet the analysis objectives of the study (see Appendix II). The questionnaire will be translated into isiXhosa and Afrikaans as the most commonly used languages other than English among the study population.
Study variables

The selection of variables for the study took into account issues of applicability based on experiences and recommendations from previous studies. The outcome variables on health-seeking behaviours have been adapted from the 2003 South Africa Demographic and Health Survey (Department of Health et al., 2007) and similar care-seeking studies conducted in the past. Similarly, construction of explanatory variables on social capital and socioeconomic determinants has been largely informed by the WHO literature, the World Bank’s instruments for social capital assessment (World Bank, 2012) and other previous studies.

**Outcome variables:** The study will have three (03) outcome variables namely: (i) whether or not the parent or caregiver sought health care the last time their child presented with illness, (ii) if they sought care, type of first choice of health care provider where care was sought from, and; (iii) how soon upon discovering the illness in the child was health care was sought.

**Explanatory variables:** The study’s explanatory variables are broadly categorised under demographic, socioeconomic and social capital. These include the determinants of health-seeking behaviours of parents in Khayelitsha Township. The table below gives a summary of conceptual and operational level definitions of outcome and explanatory variables for the proposed study.

<table>
<thead>
<tr>
<th>Conceptual definition</th>
<th>Operational definition/type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome variable:</strong></td>
<td></td>
</tr>
<tr>
<td>Health-seeking behaviour of caregiver when a child is ill.</td>
<td>Criterion for inclusion: Respondent had to recall whether or not any child in the sampled household became ill at any time prior to the interview (<em>binary variable - household excluded if answer was 'NO'</em>). (i) Whether or not the sick child’s caregiver had sought any healthcare within 24 hours (<em>binary variable</em>). (ii) If sought care, type of health care provider sought as first choice (<em>nominal variable</em>).</td>
</tr>
<tr>
<td><strong>Predictor variables:</strong></td>
<td><em>Household level:</em></td>
</tr>
</tbody>
</table>
| Demographic, socioeconomic and social capital variables* | • Gender of sick child,  
• Caregiver’s perception of severity of illness,  
• Caregiver’s previous experience of deprivation from health services,  
• Caregiver’s age, occupation, education level  
• Household income,  
• Collective action and participation in the local community associations,  
• Perceptions of trust in the community, |
|  | *Contextual/Neighbourhood level:* Name of neighbourhood |

1 Empirically tested social capital variables adapted from the World Bank (2012) and other resources.
Data management and analysis

Data entry and cleaning

Quantitative data will be entered and cleaned using Epi Info software version 7 (CDC, 2011). Data cleaning will utilise the Epi Info version 3.5.3 'Duplicate and VALIDATE' function to ensure high quality of data output by tracking and correcting consistency and processing errors. Data will then be exported to and analysed using Stata 11 (StataCorp., 2009). Data entry and backups will be conducted in a secure environment to facilitate strict supervision by the principal investigator.

Data analysis plan

Quantitative data will be analysed using descriptive and inferential statistics focusing both at community and at household levels. Demographic and other background data will presented by way of frequency tabulations and percentages. Multilevel modeling will be done using Stata version 11 (StataCorp., 2009). The justification for applying multi-level techniques for inferential statistics is to allow for cross comparison of both within-cluster and between cluster characteristics associated with health seeking behaviours in the study communities. This is because the study involves parents and caregivers of children as units of analysis nested within two hierarchical levels –the household and the community.

Study limitation

One potential limitation of the study is concerned with recall periods. This limitation is generally associated with studies involving self-reported behaviours, as individuals are more likely to remember events that occurred in the immediate than more distant past (Ryan, 1998). At the same time, the study acknowledges that if the recall period is significantly reduced many sampled households may turn out to be ineligible for the study and have a negative bearing on sample size and hence costs. The proposed study will attempt to strike a balance between obtaining adequate number of eligible sampled households and addressing the recall bias challenge by leaving the question on last time a child became ill open-ended, and only categorising the responses at the time of analysis. The recall periods given in the responses will later be categorised into three parts, starting with the earliest occurring episode of a household’s experience of symptomatic episode in a child’s illness, that is, a period of 4 weeks. This will be followed by a period between one month and one year, and finally by recall period of over one year. Other recall questions on socioeconomic variables such as household’s income will be limited to a month’s period prior to the survey.
Pilot study

One method of assessing the reliability of a study’s instruments is by comparing the responses given in pre-tests (Weisberg et al., 1989). Pretesting instruments can also help in the planning for logistics and appraising the adequacy of the recruited data collectors to conduct the field work (Joubert & Ehrlich, 2007). Therefore, this proposed study has incorporated a pilot study to pre-test the instruments. The pilot study will be done on four (04) households to check for potential issues of consistency, sensitivity, format, wording and clarity of questions and instructions, and any other factors that might have a negative bearing on data collection and analysis. It is assumed that the four (04) households will be sufficient to facilitate this. After pretesting, necessary adjustments and refinements to the instruments will be made before commencing main data collection.

Ethics and communication

Human subjects protection

Clearance and approval will be sought from the Human Research Ethics Committee to ensure that the study conforms to the minimum ethical principles. The study has incorporated ethical measures to ensure that participants remain unharmed, protected from exploitation and assisted when necessary before, during the course of, and after data collection.

Information sheet and informed consent forms

Participation in the study will be voluntary. An information and consent document (see appendix I) containing the overview and objectives of the study will be read out to all participants prior to any interview. Upon understanding the study information, individuals who wish to volunteer to participate in the study will be required to acknowledge their participation by signing the statement of consent on the informed consent document.

Participant confidentiality

All study instruments will use unique identifiers of participants. All study instruments including forms with personal identifiers such as the informed consent documents will be stored in a secured place with restricted access to the research team.
Potential risks

The potential harms of the study are minimal; these include some possibility of confidential and sensitive information shared by participants with the interviewer leaking to others. This risk will be minimised by ensuring that all the hired data collectors are oriented on ethical study principles and sign a declaration to maintain confidentiality before commencing field data collection.

Potential benefits

Findings from this study will in general benefit the overall population of Western Cape Province, and specifically the Provincial Department of Health, by highlighting the new dimension of existing levels of trust, social networks and other social capital assets in Khayelitsha and Cape Town and how these can be exploited by planners in developing appropriate community-responsive policies and strategies to improve access to health care for childhood illnesses.

Stakeholders and reporting of results

Main stakeholders in this study will include the Western Cape Provincial Department of Health, the student fraternity, the City of Cape Town municipality, local civic organisations, health care facilities, churches and the general population of Khayelitsha Township.

Study results will be disseminated to planners, policy makers and the general community through a policy brief. The detailed dissertation will be disseminated to the scientific community in the form of a manuscript published through an appropriate peer-reviewed journal.

- **Dissertation structure**: This protocol will form part of the four sections of the dissertation as per format requirement of the academic programme, namely: *Part A-Proposal; Part B-Literature review; Part C-; and; Part D-Appendices.*

Logistics

Field management

Four temporary Research Assistants conversant in English, isiXhosa and Afrikaans will be hired to help with data collection and entry. The principal investigator will assign tasks to Research Assistants and manage and coordinate all the day-to-day activities of the study. The Research Assistants will be oriented in the guidelines for good clinical practice (MRC, 1998), and they will be required to sign confidentiality agreements prior to commencing field work.
**Time schedule**

The project will be spread across a five-month period from conception to final report. The Gantt chart below shows the summary of key milestones to be accomplished with the final report and *policy brief* being submitted in early October 2012.

**Table 4: Activity schedule for the proposed study**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Week:</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
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<tr>
<td>Protocol development</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor’s feedback</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Submission for ethics approval</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics approval feedback</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Orientation for RAs</td>
<td></td>
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<tr>
<td>Pilot sampling &amp; pretesting</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Data analysis</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Report writing</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First draft report</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Final report &amp; policy brief</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Study budget**

The proposed total budget for this study is US Dollar **$6,872.29** (or the equivalent$^2$ South African Rand **R54,978**). This budget will be all-inclusive of the costs of 2 days training of 4 data collectors, 1 day of pilot sampling and pretesting of instruments, procurement of stationery, transport costs, and lunch/stipend for 20 days fieldwork/data collection, 14 days data entry and analysis, and write-up of final report with the policy brief. The budget for the entire undertaking is broken down as shown in table 4 below.

$^2$ Exchange rate quoted at US$1.00 = R8.00
## Table 5: Proposed study activity-based budget

<table>
<thead>
<tr>
<th>Activity and Item Description</th>
<th>Justification for Activities and Items</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Cost (R)</th>
<th>Amount (R)</th>
<th>Amount (US $)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity # 1: Household Data Collection - 300 Households</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stipend for four data collectors</td>
<td>To ensure accomplishing target of 300 households within 20 days @ R250/person/day</td>
<td>20 days x 4 persons</td>
<td>Days</td>
<td>250</td>
<td>20,000</td>
<td>2,500.00</td>
</tr>
<tr>
<td>Air time</td>
<td>For communication and logistical support during data collection @ R12/person/day</td>
<td>20 days x 4 persons</td>
<td>Days</td>
<td>12</td>
<td>960</td>
<td>120.00</td>
</tr>
<tr>
<td>Translation of questionnaire</td>
<td>Translation into 2 main local languages other than English (Afrikaans and isiXhosa)</td>
<td>2,477 words x 2</td>
<td>Words</td>
<td>0.45</td>
<td>2,229</td>
<td>278.66</td>
</tr>
<tr>
<td>Photocopying of survey instruments</td>
<td>Questionnaires and informed consent forms to be used for household interviews</td>
<td>310 copies x 10 pages</td>
<td>Item</td>
<td>0.36</td>
<td>1,116</td>
<td>139.50</td>
</tr>
<tr>
<td>Paper folders</td>
<td>For securing and carrying survey instruments</td>
<td>3</td>
<td>Item</td>
<td>100</td>
<td>300</td>
<td>37.50</td>
</tr>
<tr>
<td>Notebooks</td>
<td>For note taking during data collection</td>
<td>5</td>
<td>Item</td>
<td>50</td>
<td>250</td>
<td>31.25</td>
</tr>
<tr>
<td>Pencils</td>
<td>For use during questionnaire administration, FGDs and note-taking</td>
<td>1</td>
<td>Dozen</td>
<td>100</td>
<td>100</td>
<td>12.50</td>
</tr>
<tr>
<td>Erasers</td>
<td>For use during questionnaire administration, FGDs and note-taking</td>
<td>1</td>
<td>½ Dozen</td>
<td>100</td>
<td>100</td>
<td>12.50</td>
</tr>
<tr>
<td>Transport - hire of vehicle</td>
<td>To support movement to and within communities during data collection</td>
<td>20</td>
<td>Days</td>
<td>500</td>
<td>10,000</td>
<td>1,250.00</td>
</tr>
<tr>
<td>Fuel</td>
<td>To support movement to and within communities during data collection</td>
<td>20</td>
<td>Days</td>
<td>230</td>
<td>4,600</td>
<td>575.00</td>
</tr>
<tr>
<td><strong>Sub-total Household Data Collection:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>39,655</strong></td>
<td><strong>4,956.91</strong></td>
</tr>
<tr>
<td><strong>Activity # 2: Focus Group Discussions and Key Informant Interviews</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-tape recorder</td>
<td>For use during focus group discussions and key informant interviews</td>
<td>1</td>
<td>Item</td>
<td>900</td>
<td>900</td>
<td>112.50</td>
</tr>
<tr>
<td>Micro tapes</td>
<td>For use in tape recorders during focus group discussions and key informant interviews</td>
<td>1</td>
<td>½ Dozen</td>
<td>450</td>
<td>450</td>
<td>56.25</td>
</tr>
<tr>
<td>Batteries (size AAA)</td>
<td>For use in tape recorders during focus group discussions and key informant interviews</td>
<td>2</td>
<td>Pack</td>
<td>30</td>
<td>60</td>
<td>7.50</td>
</tr>
<tr>
<td>Flip chart paper</td>
<td>For participatory community mapping during FGDs</td>
<td>1</td>
<td>Pack</td>
<td>90</td>
<td>90</td>
<td>11.25</td>
</tr>
<tr>
<td>Markers (assorted colours)</td>
<td>For participatory community mapping during FGDs</td>
<td>1</td>
<td>½ Dozen</td>
<td>50</td>
<td>50</td>
<td>6.25</td>
</tr>
<tr>
<td>Stipend for two FGD Facilitators</td>
<td>One moderator and one note-taker will be engaged for FGDs and key informant interviews @ R250/person/day</td>
<td>2 days x 2 persons</td>
<td>Days</td>
<td>250</td>
<td>1,000</td>
<td>125.00</td>
</tr>
<tr>
<td>Air time</td>
<td>For communication and logistical support during data collection @ R12/person/day</td>
<td>2 days x 2 persons</td>
<td>Days</td>
<td>12</td>
<td>48</td>
<td>6.00</td>
</tr>
<tr>
<td>Activity</td>
<td>Description</td>
<td>Details</td>
<td>Quantity</td>
<td>Unit</td>
<td>Cost</td>
<td>Percentage</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>---------</td>
<td>----------</td>
<td>------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Refreshments for discussants x four groups</td>
<td>For water and refreshments during FGD @ R200/group</td>
<td>4</td>
<td>Group</td>
<td>200</td>
<td>800</td>
<td>100.00</td>
</tr>
<tr>
<td>Transport refunds for FGD discussants</td>
<td>Meeting the transport cost of participants travelling to attend FGDs @ R20/person in line with ethical principle of beneficence</td>
<td>2 days x 16 persons</td>
<td>Days</td>
<td>20</td>
<td>640</td>
<td>80.00</td>
</tr>
<tr>
<td>Hire of venue</td>
<td>Church, school or community hall to host 2 groups of participants per day for 2 days</td>
<td>2</td>
<td>Days</td>
<td>300</td>
<td>600</td>
<td>75.00</td>
</tr>
<tr>
<td>Transport - hire of vehicle</td>
<td>To support movement to and within communities during data collection</td>
<td>2</td>
<td>Days</td>
<td>500</td>
<td>1,000</td>
<td>125.00</td>
</tr>
<tr>
<td>Fuel</td>
<td>To support movement to and within communities during data collection</td>
<td>2</td>
<td>Days</td>
<td>230</td>
<td>460</td>
<td>57.50</td>
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<tr>
<td><strong>Sub-total Focus Group Discussions:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>6,098</strong></td>
<td><strong>762.25</strong></td>
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<tr>
<td>Activity # 3: Data Management – Data Entry and Cleaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Focus Group Discussion Transcription</td>
<td>For data transcribing of 4 recorded FGDs @ R400/transcription</td>
<td>4</td>
<td>Interview recording</td>
<td>400</td>
<td>1,600</td>
<td>200.00</td>
</tr>
<tr>
<td>Lunch/stipend for two Data Entry Clerks</td>
<td>For data entry using Epi Info ‘duplicate and VALIDATE’ programme to minimise data entry errors@ R250/person/day</td>
<td>14 days x 2 persons</td>
<td>Days</td>
<td>250</td>
<td>7,000</td>
<td>875.00</td>
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<tr>
<td>4 GB Flash Disk</td>
<td>For securing data storage and backups</td>
<td>1</td>
<td>Item</td>
<td>250</td>
<td>250</td>
<td>31.25</td>
</tr>
<tr>
<td><strong>Sub-total Data Management:</strong></td>
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<td></td>
<td></td>
<td><strong>8,850</strong></td>
<td><strong>1,106.25</strong></td>
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<tr>
<td>Activity # 4: Data Analysis and Report Write-Up</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Paper</td>
<td>Printing and binding of final report and policy brief</td>
<td>1</td>
<td>Ream</td>
<td>50</td>
<td>50</td>
<td>6.25</td>
</tr>
<tr>
<td>Internet</td>
<td>For online data and information search</td>
<td>5</td>
<td>Hours</td>
<td>10</td>
<td>50</td>
<td>6.25</td>
</tr>
<tr>
<td>Air time</td>
<td>For appointments and communication</td>
<td>5</td>
<td>Item</td>
<td>55</td>
<td>275</td>
<td>34.38</td>
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<tr>
<td><strong>Sub-total Report Write-Up:</strong></td>
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<td></td>
<td></td>
<td><strong>375</strong></td>
<td><strong>46.88</strong></td>
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<tr>
<td><strong>Grand Total</strong></td>
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<td></td>
<td></td>
<td><strong>R 54,978</strong></td>
<td><strong>$6,872.29</strong></td>
</tr>
</tbody>
</table>

* Exchange rate quoted at US $1.00 = R8.00
References


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Objectives of the literature review

Our study’s hypothesis was that parents’ health-seeking behaviour for children is associated not only with individual social capital variables but also with unobserved neighbourhood contextual effects. Therefore, the objective of this literature review was to substantively establish the empirical and theoretical evidence around this study problem. We analysed literature to synthesise and critically appraise current state of knowledge relating to the hypothesis. We sought to explore empirical evidence from previous studies that had examined socioeconomic and individual household social capital factors including trust, collective action and membership in community associations, and contextual effects of neighbourhoods, as predictors of healthcare seeking behaviour. We also sought to identify gaps in the literature to help highlight potential areas for future research. Our reviewed literature included studies from around the world that we considered to be relevant to the study’s objectives.

Literature search strategy

We used the following search resources and databases to extract and select our studies of interest: Google, Google Scholar, Medline, PubMed, Global Health, Web of Science, and Popline. We conducted our searches using truncation and wildcards of the following key words: Social capital, health-seeking, healthcare-seeking, children, neighbourhoods, and multilevel modelling.

Inclusion and exclusion criteria

To be included in the analysis, the extracted studies had to be about predictors of healthcare seeking, including but not restricted to socio-demographic, economic, social capital predictors and contextual effects of neighbourhoods. The studies also had to be in English language, and had to have been conducted between January 1985 and June 2014. However, we did also include some older articles in circumstances where we felt that they presented relevant backgrounds that significantly contribute to the buildup to contemporary theories on social capital, health and healthcare seeking, and multilevel modeling.

Summary of reviewed studies

Over fifty (50) print and electronic literatures on health and health-seeking behaviour, social capital and multilevel (contextual) modeling were systematically reviewed and referenced in an attempt to establish the research gaps and to inform the design of the study. Electronic literatures were sourced using search engines and referencing databases stated above, including government websites. The table below presents a summary of the reviewed literature.
<table>
<thead>
<tr>
<th>Author(s) and Year</th>
<th>Country</th>
<th>Study Abstract/Summary</th>
<th>Study Focus/Title</th>
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</thead>
<tbody>
<tr>
<td>1. Akin, J. S., Guilkey, D. K., Hutchinson, P., &amp; McIntosh, M. (1998)</td>
<td>Nigeria</td>
<td>Using data from the Uganda National Household Survey (UNHS), this study analysed the demand for curative health care for both adults and children to changes in associated costs, using discrete choice modeling. The study found income to be a strong predictor of healthcare utilisation across all ages.</td>
<td>Price elasticities of demand for curative health care</td>
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<tr>
<td>2. Lawson, D. (2004)</td>
<td>Uganda</td>
<td>This study conducted in Uganda found income to be strongly associated with increased utilisation of health care for all age groups and more so for females. Education, distance to facility and type of service provider (private vs public) were also strong correlates of healthcare seeking.</td>
<td>Determinants of health seeking behaviour in Uganda – is it just income and user fees that are important?</td>
</tr>
<tr>
<td>3. Akin, J. S., &amp; Hutchinson, P. (1999)</td>
<td>Sri Lanka</td>
<td>This study discusses the phenomenon of bypassing nearer healthcare facilities in preference for ones located much further if users perceive their quality to be poor. This study found that bypassing behaviour is not very different across income groups is certainly noteworthy, as is the fact that the more severely ill tend to bypass and to travel further for care than do the less severely ill. In multivariate analysis almost all characteristics of both providers and facilities are found to have the a priori expected relationships to facility choice.</td>
<td>Health-care facility choice and the phenomenon of bypassing</td>
</tr>
<tr>
<td>4. Andersen, R., &amp; Neuman, J. F. (1975).</td>
<td>USA</td>
<td>This is an ethnographic study by the Milbank Memorial Fund Quarterly/Health and Society presents Societal and individual determinants of medical care utilization in the United States.</td>
<td>Societal and individual determinants of medical care utilization in the United States</td>
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<tr>
<td>5. Appleton, S. (1998).</td>
<td>Kenya</td>
<td>This household survey conducted in Kenya discusses the impact of public services on health and illness: a treatment effects model with sample selectivity, published in <em>Journal of African Economies.</em> The study concluded that. The study found that both maternal distance to health facilities primary education, affect take-up of child health care.</td>
<td>The impact of public services on health care and illness: a treatment effects model with sample selectivity</td>
</tr>
<tr>
<td>6.</td>
<td>Ben-Shlomo, Y., &amp; Kuh, D. (2002).</td>
<td>UK</td>
<td>This article published in the International Journal of Epidemiology presents the LifeCourse Models and describes the link long-term effects on chronic disease epidemiology in terms of disease risk of social and physical exposure right from gestation, childhood, through to adolescent. Our study used some of the arguments presented in this article to justify our focus on children’s wellbeing and child health.</td>
</tr>
<tr>
<td>7.</td>
<td>Braveman, P. (2006).</td>
<td>USA</td>
<td>This article discusses the definitions and meaning of the terms &quot;health disparities,&quot; &quot;health inequalities,&quot; or &quot;health equity.&quot; The definitions helped our choice of measurements indicators. The article contends that health disparities/inequalities do not refer to all differences in health. A health disparity/inequality is a particular type of difference in health (or in the most important influences on health that could potentially be shaped by policies); it is a difference in which disadvantaged social groups– such as the poor, racial/ethnic minorities, women, or other groups who have persistently experienced social disadvantage or discrimination–systematically experience worse health or greater health risks than more advantaged social groups.</td>
</tr>
<tr>
<td>8.</td>
<td>Burton, D. C., Flannery, B., Onyango, B., Larson, C., Alaii, J., Zhang, X., Feikin, D. R. (2011).</td>
<td>Kenya</td>
<td>This is a cross-sectional survey conducted on households with children aged less than five years conducted in 35 census enumeration areas in Kenya’s Bondo District. The study evaluated healthcare sought for acute episodes of diarrhoea or fever in the past two weeks or pneumonia in the past year, for which the results showed that seeking healthcare at health facilities was more likely for children from households with higher socioeconomic status and with more symptoms of severe illness. Seeking healthcare at health facilities and hospitals also varied by syndrome, severity of illness, and characteristics of the patient.</td>
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<td>9.</td>
<td>Chola, L., &amp; Alaba, O. (2013)</td>
<td>South Africa</td>
<td>This is a cross-sectional study on social capital employing multilevel approaches using the 2008 South Africa National Income Dynamic Survey. Using self-reported on a scale from 1 (excellent) to 5 (poor), the study found males to be more likely to report good health compared to females. In addition, trust was positively associated with reporting good health and there was strong association.</td>
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</table>
between neighbourhood social capital and reporting good health. For example in North and Gauteng increased neighbourhood social capital was positively associated with reporting good health.

| 10. Cleary, S. M., Birch, S., Moshabela, M., & Schneider, H. (2012). | South Africa | This is a journal article presenting findings of a study in Cape Town on barriers to access to health for users of ART, published in the Sexually Transmitted Infections Journal. The article presents the different dimensions of access with reference to antiretroviral treatment for People Living with HIV/AIDS. The study highlights that despite the public sector health services being free at the point of use, there is very little that is known about overall access barriers. | Unequal access to ART: exploratory results from rural and urban case studies of ART use. *Sexually Transmitted Infections* |

| 11. Dor, A., & Gaag, J. van der. (1987). | Ivory Coast | This is a paper on demand for healthcare in the developing countries using the case of Ivory Coast. | The demand for medical care in developing countries: quantity rationing in rural Cote d’Ivoire |


| 13. Gerdtham, U. G., & Johannesson, M. (1999). | Zimbabwe | This paper uses the Swedish micro data to estimate the Grossman model of demand for health. The dataset comprised of a random sample of over 5000 individuals taken from the Swedish adult population. The paper measured health capital as a categorical measure of overall health status. The paper showed findings consistent with the theoretical predictions in that the demand for health increases with income and education and decreases with age, being overweight, male gender, living in big cities and being single. | New estimates of the demand for health: results based on a categorical health measure and Swedish micro data |

| 14. Gordon, D. (2003). | Global / Multi-country | This is a report that presents measurement of the extent of child poverty in the developing countries. In the report, child poverty is measured according to internationally agreed definition as used by the international framework of child rights. | Child poverty in the developing world. Measurement |

| 15. Grossman, M. (1972a). | Global / Multi-country | This paper is partly based on Michael Grossmans’s PhD dissertation at Columbia | On the concept of health capital and the
<table>
<thead>
<tr>
<th></th>
<th>country</th>
<th>University on the demand for health and healthcare. The study was aimed at investigating a model of the demand for the commodity &quot;good health,&quot; with consideration that health is seen to be a durable capital stock that yields an output of health time. With the assumption that individuals inherit an initial stock of health which depreciates over time, Grossman showed that the shadow price of health rises with age if the rate of depreciation of health stock rises above the life cycle and declines with education if more people with high education.</th>
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<td>16.</td>
<td>Montgomery, S. M., Bartley, M. J., Cook, D. G., &amp; Wadsworth, M. E. (1996).</td>
<td>This Journal article from Epidemiology &amp; Community Health discusses unemployment and health among young persons in the UK. The study found that both geographical region and poor socioeconomic conditions in childhood were associated with unemployment.</td>
<td>Health and social precursors of unemployment in young men in Great Britain. Journal of Epidemiology and Community Health</td>
</tr>
<tr>
<td>19.</td>
<td>Smith, G. D. (2003).</td>
<td>This is a book publication on the Lifecourse perspective on adult health and on health inequalities. The book discusses the work of one of distinguished academics in the field with focus on public health policy, epidemiology, health promotion and social policy.</td>
<td>Health inequalities: lifecourse approaches</td>
</tr>
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<td>20.</td>
<td>UN. (2011).</td>
<td>This report highlights the progress towards achievement of the millennium development goals as at the close of the year 2010, and demonstrates how some countries and regions have made tremendous strides compared to others.</td>
<td>The millennium development goals report 2011</td>
</tr>
<tr>
<td>21.</td>
<td>UNICEF. (2012).</td>
<td>This is an annual publication by UN inter-agency group for child mortality estimation. The publication demonstrates, through showing mortality and morbidity levels and trends, the slow pace of Sub-Saharan Africa compared to other regions in terms of progress towards improving child mortality indicators.</td>
<td>State of the world’s children 2012: children in an urban world.</td>
</tr>
<tr>
<td>22.</td>
<td>Wadsworth, M. E. J. (1997).</td>
<td>This is an article in the Social Science Medicine explores Life history approaches to the study of health inequalities. The article argues that the social and biological and beginnings of life carry important aspects of the child’s potential for adult health in</td>
<td>Health inequalities in the life course perspective</td>
</tr>
</tbody>
</table>
that they set operational parameters for certain processes and organs. The article contends that social determinants in childhood influence the processes of biological development and present as the beginnings of socially determined pathways to health in adult life.

| 23. Wagstaff, A. (1986). | Global / Multi-country | This paper by Wagstaff presents estimates of the pure consumption and pure investment models of the demand for health of both the structural demand for healthcare equations and the reduced form. In this paper, Wagstaff also explores the implications of reliability of the parameter estimates and attempts to demonstrate how previous studies failed to recognise this. | The demand for health: some new empirical evidence |

| 24. Ward, H., Mertens, T. E., & Thomas, C. (1997). | Africa / Multi-country | This paper demonstrates that what people do when they have symptoms or suspicion of diseases (such as sexually transmitted diseases) has major implications for transmission for disease control. The paper highlights that delays in seeking and obtaining diagnosis and treatment can allow for continued transmission and the greater probability of adverse effects, and goes on to highlight that understanding health-seeking behaviour is important for successful and effective disease control programmes. The paper concludes that at the moment relatively little is known about who people turn to for advice, or about how symptoms are perceived or recognized or related to health-seeking decisions. It is argued that such knowledge would assist programme planners in the development of more accessible and effective services. The paper also contends that studies of health seeking behaviour need to include a combination of qualitative and quantitative methods. | Health seeking behaviour and the control of sexually transmitted disease. Health Policy and Planning |
Interpretation of reviewed literature

Literature highlighting evidence of high infant mortality

According to UNICEF (2012) almost 8 million children died in 2010 before reaching the age of 5 globally. In developing countries alone, nearly 13 million infants and children die each year, with the majority of these deaths resulting from preventable diseases and other health causes (Mbagaya et al., 1998).

The Millennium Development Goal number 4 sets a target of reducing under-five mortality rate by two thirds between 2009 and 2015. However, recent evaluation of progress against this benchmark highlights that, while most developed countries are either on track or have already accomplished the target, developing countries are still lagging behind (UN, 2011). This is a typical illustration of the high sensitivity of child health outcomes to regional and socioeconomic differentials.

In South Africa, although they reported different magnitude of statistics because of survey design issues, three separate surveys - the 1988-1992 Human Science Research Council (HSRC) Survey, and the South Africa Demographic and Health Surveys (SADHS) for 1998 and 2003 - all demonstrate that indicators for early childhood mortality have been deteriorating since 1990s. By 2003 the estimated mortality rates for children falling in the age groups 0-4, 5-9 and 10-14 were as high as 58, 49 and 33 per 1,000 live births, respectively (Department of Health et al., 2007). Figure 1 below shows trends in child mortality rate in South Africa from 1980s to 2000 as reported by the 1988-1992HSRC, the 1998SADHS and the 2003SADHS.

Review of theories, models and concepts used in the study

Concepts and analytical techniques on health and healthcare seeking

The definition of health has been evolving over time. For the purpose of the proposed study, health will still be defined as per World Health Organisation (WHO) definition. The WHO defines health as “a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity” (WHO, 1948). There are other generally accepted definitions of health. For example Bircher (2005) defines health as “a dynamic state of well-being characterized by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility.” On the other hand Saracci (1997) defines health as “a condition of wellbeing, free of disease or infirmity, and a basic and universal human right.”
There has been some critique to the WHO (1948) definition. Critics of the WHO definition make reference to the lack of ‘happiness’ in the definition, and much more recent definitions have attempted to broaden the scope to include this. Another critique holds that the WHO definition of health is rigid and unrealistic, and that the use of the term ‘complete’ in the definition makes it highly unlikely that anyone would be healthy for a reasonable period of time.

Hence some alternative definitions have been suggested. For example, Becker’s (1974) and Bircher’s (2005) definitions attempt to take into account the changing health needs in relation to culture, an individual’s age, and personal responsibility. Another definition by Saracci (1997) attempts to provide an intermediate concept that links the WHO definition to issues of human rights, equity, and justice. These and other definitions introduce valuable concepts aimed at improving the current WHO definition of health. Health care on the other hand involves the maintenance and restoration of both physical and mental aspects health through prevention, diagnosis and treatment, and constitutes all the efforts by an individual aimed at achieving this. Health care can be either preventative or therapeutic. These components can be further categorised into primordial prevention, primary, secondary and tertiary levels of care. Primordial prevention aims at restricting the development of unhealthy lifestyles and hazardous environmental conditions while primary care level targets on healthy individuals to prevent occurrence of new illness. At secondary and tertiary levels of care, interventions are aimed at diagnosis and treatment of individuals already with disease and preventing or minimising impairment or disability (Joubert & Ehrlich, 2007).

For the purposes of the proposed study, focus will be on the curative aspect of care seeking in that it will consider provider choices of parents and caregivers whose children become ill prior to or at the time of the interview. Household’s care provider choices varies by region, socioeconomic and other factors. In the context of South Africa, health care providers can be categorised under public and private sectors, chemists, traditional healers, faith healer, dentists and self-medication as established in the demographic and health surveys (Department of Health et al., 2007).

Pathways of health-seeking decisions

Pathways of health seeking decisions refer to processes and stages at which persons can make decisions aimed at actively finding a solution to a perceived illnesses or health problems. If appropriate healthcare is sought early enough, it can help prevent complications the illness and even avert death. According to Terra de Souza et al. (2000), up to 70% of child mortality is attributable to delayed health-seeking. In addition, Hill et al., (2003) contend that there is inadequate health policy for interventions that support prompt and appropriate healthcare-seeking for children. Analysing pathways of health-seeking decisions, (Alaba & Koch, 2008) found that socioeconomic dynamics at
household level affect decision-making in different ways across the pathways. As an example, they pointed out that women empowerment at household level can increase treatment seeking and preference for private healthcare providers for perceived illness, although not consistently.

**Models for health-seeking behaviour**

Broadly put, health-seeking behaviour involves the interaction of populations and individuals with the health system. Health-seeking behaviour can be defined as any actions taken by individuals in response to their perceived or experienced ill health in an attempt to appropriately address the problem or find a solution (Ward et al., 1997). It involves decision making processes that are governed by not only behaviours at individual and household level, but also by contextual community norms and expectations and characteristics. It is also influenced by behaviour of actors or care providers on the supply side. Both cognitive and non-cognitive factors come into play, making care-seeking behaviours heterogeneous across contexts. This makes contextual analysis of care seeking behaviour an important approach. Therefore, biological symptoms in individuals and other client-based factors, provider-based behaviours and factors, socioeconomic and demographic factors, social networks all interact to produce a pattern of health seeking behaviour (Ryan, 1998).

The following section outlines some of the common models used in understanding health-seeking behaviour.

Health-seeking behaviour models help in exploring the interactions between health systems and their target populations. Health-seeking behaviour models can be useful for breaking down the usually complex human behaviours into variables that help to understand household’s health-seeking patterns, the factors influencing them and how best health system interventions can be realigned to appropriately respond to these. The following models of health-seeking behaviour have been used in informing the development of variables for the proposed study: i) the Health Belief Model, ii) the Theory of Reasoned Action, and iii) the Socio-Behavioural Model.

The Health Belief Model is among the oldest approaches used in behavioural sciences (Hausmann-Muela et al., 2003). This model holds that an individual’s response to care-seeking is primarily based on their beliefs. These beliefs can relate to perceived risk to a given disease, perceived severity of an illness, perceived benefits if care is sought and perceived obstacles. The beliefs or perceptions are influenced by either demographic or psychological factors including age, gender, and religion as well as by the psychological characteristics. The beliefs are reinforced through cultural norms, religion or advice from friends and relatives. The Health Belief Model has been critiqued on grounds that it overlooks other significant factors to care-seeking behaviour such as one’s previous experiences of illness. However, by highlighting the role of beliefs and perceptions, this approach is useful in
helping design appropriate health education programs and media campaign strategies that target myths and beliefs as a way of improving access to health.

Another model is the Theory of Reasoned Action. As the name suggests, this model contends that individuals respond to health care in a planned manner due to influence of perceptions as well as the desire to conform to societal expectations. In other words, this model serves as an extension of the Health Belief Model in that it considers individuals as largely influenced by their perceptions but it also adds that individuals assess their actions by considering what other people who live around them would perceive of their actions. Therefore there is a component of personal motivation to fulfil the expectations of social networks and other people that an individual lives with. Further, like the Health Belief Model, the Theory of Reasoned Action contends that care seeking is affected by socio-demographic and personality characteristics, with policy implications being that understanding the beliefs would help develop appropriate health responses to influence access to health care. Campbell & Mzaidume (2001) point out practical applications of the Theory of Reasoned Action model in South Africa giving examples of sex workers awareness programmes. Using this approach, some health projects aimed at increasing HIV/AIDS awareness and prevention among sex workers made use of trained sex workers to disseminate health information among their networks.

Also called the Andersen model, the third model considered by this study is the Socio-Behavioural Model by Andersen. This model postulates that care-seeking behaviour can be analysed as logical sequences of factors (Andersen & Neuman, 1975). In this model, all the factors affecting utilisation of health care are arranged into sets that are logically connected. Initial factors are called predisposing factors, which lead to enabling factors which in turn influence need factors. The need factors ultimately influence health care utilisation. Examples of predisposing factors include age, gender, education, religion, previous experiences of an illness, general attitudes towards health services and knowledge about the illness. Similarly, enabling factors would constitute availability of care services, income, availability of medical schemes and health insurance, social networks and family support, while need factors would include individual’s perception of severity of an illness, number of sick days spent in bed or number of days missed from work. Initially developed to study the use of biomedical health services, the Socio-Behavioural Model has been adapted over time to incorporate the broader health system issues (Hausmann-Muela et al., 2003). For example, health utilisation has been further broken down into sub-categories of types of available care providers. In the context of South Africa, these would include traditional and faith healers, modern practitioners, drug stores, self-medication of non-prescribed drugs or no treatment. The figure below shows an extended Socio-Behavioural Model as adapted by Kroeger (1983).
The Grossman’s model of demand for health and health care

Grossman’s (1972a, b) work is among the fundamental contributions to the theory of demand for health and health care. His work has been used as a framework for analysing health issues and designing policies to address socioeconomic determinants of inequalities in health (Wagstaff, 1986). Among Grossman’s models include the pure consumption, pure investment and the generalised models for demand for health and health care. He made a distinction between the demand for health and that for health care. He presented the demand for health care is a derived demand, that is, it is derived from the individual’s desire to accumulate health in itself (Grossman, 1972a, 1972b, 2004).

According to Grossman, every individual acts as both a producer and a consumer of health. Individuals demand for health for both consumption motives, because they gain utility from being healthy; and for investment motives, because health is durable like any other capital good disposed to depreciation. This distinguishes health from other market commodities in that individuals allocate resources and time in order to both consume and produce health. They invest in health by trading off their time and resources in the form of, for example, having nutritious food, immunisation, avoiding activities and engaging in exercise. Therefore, when an individual invests in health now they expect fewer sick days, more productive days and higher income in the future. At the same time individuals consume part of their current health by obtaining utility from being healthy.
Grossman acknowledged that the demand for health is influenced by medical, sociological and epidemiological factors (Grossman, 2004). His model also highlights age, education and income as being among important predictors of demand for health and health care. He argued that these factors are used to determine the optimal level of health that an individual will demand. His model postulates that the demand for health decreases with age and increases with income and education, and that the demand for health care increases with income. He however pointed out the ambiguity of the impact of age and education on the demand for health care. Grossmann's model can be used to make estimates of the effects of changes in income, age, technological changes, prices of health care and other commodities on the demand for health and health care. The optimal level of investment in health occurs where the marginal cost of health stock is equal to the marginal benefit. An individual, therefore, determines their optimal level of demand for health care at a point where the marginal cost equals the marginal benefit (that is, the cost of maintaining health equals the expected future returns in the form of income, prevented sick days and utility).

While Grossman’s model has been used as a centre piece for analysing demand for health care, empirical tests have yielded mixed results. For example, an empirical investigation of his model by Gerdtham & Johannesson (1999) using huge national datasets from Sweden revealed some discrepancies in results with those predicted by Grossman. Gerdtham & Johannesson (1999), however, pointed out that these could have been due to methodological approaches used in the definition and measurement of health status. They pointed out that since health status is intangible, it poses measurement challenges and hence is a potential cause of the inconsistent results. They attempted to overcome this by using a combination of complimentary methods for measuring health status – using a mix of continuous measures based on the rating scale method; the time trade-off method; and a categorical measure of overall health status (Gerdtham & Johannesson, 1999). With this they reported the categorical method as yielding more consistent findings with the predictions of Grossman’s model.

Another empirical investigation of Grossman’s model by Wagstaff (1986) showed different signs between education and demand for health care contrary to Grossman’s model postulations. Grossman predicts that since better-educated individuals are more efficient producers of health, the coefficient on education in the structural demand for medical care model should be negative in that such individuals require fewer units of time and medical care inputs to produce an additional unit to their health stock compared to their less educated counterparts. When Wagstaff (1986) analysed this using large American datasets a positive coefficient yielded instead.
In spite of some discrepancies in the follow-up empirical testing of Grossman’s model by others, it remains an important piece of work especially that it highlights important correlates of social factors such as years of formal education with good health. Grossman (2004) had gone further to support his deduction that, regardless of the measurement levels used - morbidity rates, mortality rates, self-evaluation of health status, or physiological indicators of health - and education is positively associated with health outcomes. He argued that this applies whether the units of observation are individuals or groups, and that there exists a causal relationship running from increased schooling to improved health outcomes (Grossman, 2004).

**Social capital: definition and concepts**

Social capital is a multidisciplinary concept that refers to social networks, the sense of reciprocity and belonging, tolerance, interpersonal trust and norms and values that result from interaction of people (Putnam 1995; Putnam 2000; Woolcock 1998). Early applications of the concept of social capital can be traced back to the 19th century (The World Bank, 2002). However, it was not until the recent few decades that the concept has had renewed interest in terms of how it is associated with social and economic outcomes. The works of individuals such as Jacobs (1961), Bourdieu (1983), Coleman (1988), Putnam et al. (1993) and Putnam (2000) in particular helped to revive this interest. Through the publication of *Bowling Alone*, for example, Putnam (1995) used various social capital indicators to demonstrate the link between declining levels of civic engagement in the United States and the political and economic performance. In this publication he demonstrated that democracies work better when there is a long-standing tradition of civic and political participation.

At community level, family, friends and networks serve as important assets that households draw upon to solve problems, and leverage to enjoy for their own sake (Narayan, 1997). Studies have showed that communities endowed with rich stock of social networks and civic associations are more likely to confront issues of poverty and vulnerability (Putnam et al., 1993). Social capital has also been demonstrated positively correlate with education and health outcomes, and negatively with crime. For example, using a composite measure of child welfare that included teen pregnancy, infant mortality and a variety of other indicators of child wellbeing, Woolcock (1998) demonstrated that there is a very strong association of social capital with child health. He also showed that crime is strongly negatively predicted by social capital; at the state, community and neighbourhood levels.

The proposed study identifies social capital as taking two forms – structural and cognitive. The structural form constitutes tangible elements including membership to local institutions, family structure, and formal and informal networks of friends and extended family ties. The cognitive form
constitutes issues of governance, interpersonal trust, trust in institutions, and community norms and values.

**Social capital and access to health care**

The concept of access to health care is widely used by national governments to demonstrate their commitment and aspirations towards implementing health policies that are all-inclusive. The mission statement for the Ministry of Health in Zambia, for instance, states that its goal is “to provide equitable access to cost-effective, quality health services as close to the family as possible” (MoH Zambia, 2012). Similarly, for South Africa, the policy document for the proposed National Health Insurance (NHI) states that the reforms to be brought are inclined towards promoting “…equity and efficiency so as to ensure that all South Africans have access to affordable, quality healthcare services regardless of their socioeconomic status” (DoH, 2011).

However, being a multifaceted concept, the definition of ‘access’ varies depending on schools of thought. Some schools of thought emphasise the supply aspect in their definition highlighting the provision of infrastructure, personnel and medical supplies (Guagliardo, 2004; Perry & Gesler, 2000). Other paradigms such as contended by Falkingham (2004) focus on the demand side. The conceptual framework of this study acknowledges the demand-supply side debates and incorporates the three dimensions of access namely: availability, affordability and acceptability as presented by McIntyre et al. (2009).

McIntyre et al. (2009) present the three dimensions highlighting that access is the ‘degree of fit’ between the responsiveness of a health system’s service provision and community’s needs. They also highlight the cross-cutting role of empowerment and that this is achieved through increasing knowledge and information. With this definition, the level of access can be said to be inequitable if there exists systematic preventable differences between communities with different geographical or social disposition (Braveman, 2006; Cleary et al., 2012). Using McIntyre et al.’s (2009) framework, the proposed study will demonstrate the potential areas of association with and contribution of social capital towards improving access to health care for children.

The framework of this study presents the supply side as an aspect of the health system concerned with ensuring availability of health care service through provision of infrastructure, staff, drugs and other medical supplies, both formal and traditional. On the other hand the demand side refers to the capacity of households and communities to accept and utilise the services. Therefore, as argued by Cleary et al. (2012), access does not imply utilisation but rather the opportunity to do so through empowerment, which is affected by levels of need for care, which is in turn affected by level of one’s
health status. The proposed study also postulates that access is affected by social capital variables: levels of trust in institutions, culture, expectations, and income, all of which form the community and household social capital.

Social capital, therefore, is part of the social determinants or what has been referred to by McIntyre et al. (2009) as ‘multiple layers of underlying issues’ that help to defuse the unequal power relations between the health system and households. This is so in that social capital helps to strengthen information communication and interaction between the demand and the supply sides of the health system. Since social capital is defined in the context of trust, strong networks and family ties, civic and political participation, it would be expected, for example, that communities with stronger levels of trust are more likely to have higher confidence in local institutions and hence improved utilisation of local health care services. This is supported by Knack & Keefer’s (1997) study on World Values Survey where results from 29 countries confirmed that societies with higher levels of interpersonal trust are more likely to consider public officials as trustworthy and their policy pronouncements as credible. Trusting societies are also associated with better performing public institutions (R. D. Putnam, 1993). Similarly, advice obtained within social networks can shape health care decision-making. When analysing household care-seeking behaviours within the social contexts, Freidson (1959) and Polgar (1963) noted that when individual become ill they engage in some informal interactions with their neighbours, friends and co-workers in an attempt to obtain advice on treatment options.

In the final analysis, overall stronger social capital within neighbourhoods is postulated to strengthen household’s access to health care by bridging the demand-supply gap through increased interactions within the health care system. Adapted from McIntyre et al.’s (2009) framework, figure 4 below demonstrates the proposed study’s model of relationship of access to health care and social capital. The proposed study has also incorporated procedures for collecting and analysing conventional data on availability, affordability and acceptability and part of explanatory variables associated health care seeking patterns.
Health-seeking behaviour, social capital and child health

Caregivers’ health-seeking behaviour in terms of choice of care providers when their children become ill and how soon they make such decisions have a bearing on access to health care and ultimately on the burden of disease and levels of child mortality. Health-seeking models have demonstrated the interplay of diverse social determinants at different levels (including both cognitive and non-cognitive factors at individual, household, community levels) in shaping households’ care-seeking decisions. Social determinants in general, and social capital in particular, are among the areas that are increasingly being acknowledged as being pertinent in influencing health outcomes (Knack & Keefer, 1997; Pickett & Pearl, 2001). Understanding social capital determinants of health-seeking behaviour in the context of neighbourhoods or local area characteristics within urban settings can help inform the development of health policies that are more responsive to community-level characteristics needs.
Empirical review of determinants of healthcare seeking

Evidence has largely conformed to theory about factors affecting health care seeking behaviour. Among notable variables used to analyse factors affecting the demand for health care include age, education, household income and cost of treatment. Other factors are distance to facility, number of symptoms presenting and perception of severity of illness. Despite consensus on theory with empirical evidence, various studies have been yielding different magnitude and sometimes different signs of correlation coefficients of some of the key variables. This section presents some of results of literature reviewed.

With regards to income, a study on determinants of health seeking behaviour using the National Household Survey (NHS) data in Uganda reaffirmed that income is strongly associated with increased health care utilisation. Increased income was positively associated with demand for health care. This applied across all age groups especially for women (Lawson, 2004). Further, women were more sensitive to changes in treatment costs than their male counterparts. Using a discrete choice model, this Uganda study also discovered age, gender and increasing levels of education to be associated with a shift of demand away from public health facilities. The study assumed the shift to be an indication that people regard services obtained from public health facilities as being of poor quality. Other studies that confirmed the positive association of care seeking and household income include Sreeramareddy et al. (2006) and Dzator & Asafu-Adjaye (2004). Interestingly, findings by Akin and Hutchinson (1999) showed some households even bypassing closer facilities in preference to distant ones if they perceived distant ones to offer higher quality of service. However, on the contrary analysis of income groups by Li (1996) in Bolivia, and also by Alderman and Gertler (1989) in Pakistan found wealthier households to be more inelastic to changes in treatment costs. Similarly, Pillai et al. (2003) in their study in Kerala, southern India, discovered that families with higher income sought care less often particularly for milder illnesses. They realised that this could have been due to the fact that such families had sufficient resources to obtain care later if the illness failed to resolve on its own.

On treatment costs, evidence in general shows that increasing the cost of, say consultation and drugs decrease the demand for health care especially among poor households. For instance, a study by Ngugi (1999) in Kenya found that the introduction of user fees reduced the utilisation of public health services. Many other studies have supported the negative implication of user fees on access to health care (Geest et al., 2000; McIntyre et al., 2009). The South Africa demographic and Health survey also reported cost and distance as among major factors impeding access to health care, particularly among women (Department of Health et al., 2007). In the same survey over half of the
women aged 15-49 years reported either treatment cost or distance as being the major problem affecting their access to health care when they were sick. However, there also have been conflicting findings among some non-African countries. Notable are the World Bank-supported study in the Philippines and another study in Benin whose findings suggested that there was relatively little impact of treatment cost on the demand health care (Akin et al., 1998; World Bank, 1987).

As for distance, evidence on the impact of distance to health facility is less mixed and has commonly been found to be an important factor associated with decreases in health care demand. The negative impact of distance to facility on utilisation of health services has been confirmed by Lavy & Quigley (1995) for Ghana and Appleton (1998) for Kenya.

Gender is another important determinant of care seeking. Gender disparities in access to health services have been studied in a number of contexts. It is assumed that the opportunity costs of seeking health care seeking faced by women are higher than for men thus deterring them from accessing health services to a larger extent. For example, Mwabu et al. (1994) found that both distance and user fees reduced demand for health care, but men were less constrained than women. Gender and age of the sick child are additional factors in influencing care seeking by parent or caregiver. A study in Kenya for instance observed trends towards increased public facility use for boys compared to girls although not statistically significant (Burton et al., 2011). Similarly in the same study, when compared to under-five children, older children had generally less health care utilisation.

As for the number of symptoms presenting in the child, studies such as by Sreeramareddy et al. (2006) established that mothers were more likely to seek professional care from public or private facility for their children when the child presents more than one symptom.

In terms of education and care seeking, there seems to be more mixed findings. Although education is widely accepted as a very important determinant, Dor and Gaag (1987) and Behrman (1984) found no significant effect on the decision to choose a professional health care among more educated respondents in Nicaragua. However, the positive association of education and care seeking has been supported and confirmed by many other studies including Sreeramareddy et al. (2006) and Dzator & Asafu-Adjaye (2004) in Ghana.

Finally individuals’ perception of severity of illness is associated with increased utilisation of health care. A study by Burton et al. (2011) on febrile illness in Kenya and another study on malaria provider choice in Ghana by Dzator & Asafu-Adjaye (2004) both confirmed that perception of severity of illness is associated with higher levels of health care utilisation. Further, severity of illness
itself also matters. It has been established that individuals who are seriously ill are more likely to travel further to seek care than those who are less ill (Akin & Hutchinson, 1999; Dzator & Asafu-Adjaye, 2004).

- **Identified needs for further research**

Evident from the reviewed literature is the inadequacy of representation of developing countries in so far as studies on social capital and health seeking behaviour undertaken are concerned. This was especially the case for Sub-Saharan Africa in general and South Africa in particular. There were very few studies on either social capital or health seeking behaviour particularly on children that employed multilevel modeling. Of the reviewed literatures, over 25% were multi-country studies undertaken in Western, high-income country settings. The UK accounted for over 8% while USA over 12%. On average, studies from African countries accounted for only about 4% of the reviewed articles, including from East Africa, West Africa and North Africa, and majority of these did not include effects of neighbourhood contexts in the analysis. The rest were literatures from Asia and elsewhere. Due to the context-specific nature and measurement challenges of social capital, it is often argued that caution to be made when before generalising social capital results from developed Western countries to resource-poor settings as findings from one context may be very different to another. This highlights the existing gaps in studies on social capital in Sub-Saharan Africa, and more specifically in South Africa.

**Conclusion**

Our literature review presented comprehensive background on theories, models and concepts of health, healthcare and healthcare seeking. The review synthesised the contemporary evidence on predictors of healthcare seeking and the importance of taking into account the contexts of neighbourhood effects on health outcomes. However, majority of the extracted studies are from the developed country settings, which demonstrates the research gaps on inadequate number of studies relating to social capital and healthcare seeking in developing countries. Through literature on the *Lifecourse Perspective*, our study demonstrated the importance of child-health oriented studies as a way of promoting long term good health even when the children become adults and throughout the rest an individual’s life. Further, our review highlighted the rationale for the focus of study because social capital adds to the value of including in the analysis social determinants of health since medical factors alone have failed to explain the health inequalities across regions.
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PART C: JOURNAL MANUSCRIPT
Social capital and household health-seeking behaviour for children: Do neighbourhoods count? A case study of Khayelitsha in Western Cape Province, South Africa
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Abstract

Background:
Globally, almost 8 million children died in 2010 before reaching the age of 5 largely due to preventable diseases. Analysis of the distribution of child mortality indicators highlights huge differentials that still exist both between and within regions. Prompt seeking of appropriate healthcare by caregivers is critical for effective management of childhood illnesses and ultimately for mortality reduction. Studies have shown that households can draw on social capital, including trust and social networks, to improve health outcomes for children. Other studies have demonstrated that health outcomes may significantly differ across different neighbourhoods of the same community. Therefore, understanding social capital and healthcare-seeking behaviour in the context of neighbourhoods can help in the formulation of responsive health policies and strategies that promote child health and overall well-being for different populations. The objective of this study was to investigate social capital factors that are associated with healthcare-seeking behaviour of caregivers when their children become ill, using the case of neighbourhoods in Khayelitsha Township in the Western Cape Province of South Africa.

Methods
A cross-sectional survey was conducted on 309 households sampled from 24 neighbourhoods in Khayelitsha Township. Data were collected through face-to-face interviews using a structured questionnaire administered to caregivers aged 18 years or older. Data were analysed by way of multilevel modelling using mixed effects logistic regression in Stata 11.

Results
The respondents had a median age of 33 years (inter-quartile range, IQR: 27.8-42.8) and majority (85%) of the respondents were women. The monthly income for the surveyed households ranged between R200 and R9,000 with mean of R2,257 (median of R1,500) and inter-quartile range (IQR) of R1,177–R3,337. We found sex and age of child, and severity of illness to be important individual-level predictors of caregivers’ healthcare seeking behaviour. Equally importantly, our findings also highlight the significant effect of neighbourhood-level characteristics on overall health outcomes. Nearly 20% of overall variation in healthcare seeing was attributable to neighbourhood-level factors.
Conclusions

Besides demonstrating the role that social capital plays on improving health outcomes, this study also showed significant amount of variations in health seeking behaviour attributable to neighbourhood effects within the same Township, over and above individual-level factors. As an implication for policy, this finding underscores the importance of policymakers to take into account the different neighbourhood-level contexts within intervention communities when designing, implementing and evaluating policy.
Key Words

- Social capital
- Health-seeking
- Children
- Caregivers
- Neighbourhood
- Multilevel modeling
CHAPTER 1: BACKGROUND

Background

World over an average of 18,000 children under the age of five die every day (UNICEF, 2012). In developing countries alone, nearly 13 million infants and children die each year, with the majority of these deaths resulting from preventable diseases (Mbagaya et al., 1998).

The Millennium Development Goal number 4 sets a target of reducing under-five mortality rate by two thirds between 2009 and 2015. However, recent evaluation of progress against this benchmark shows that, while the overall global infant mortality trends have been declining, a closer look at the statistics shows stark differences in the rate of improvement between Saharan Africa and other regions. In 1990 the probability of dying before the age five in Sub-Saharan Africa was 1.5 times higher than in Southern Asia, 3.4 times higher than in Latin America and the Caribbean and 12.1 times higher than in developed regions. By 2011 the probability had increased to 1.8 times higher than in Southern Asia, 5.7 times higher than in Latin America and the Caribbean and 16.5 times higher than in developed regions (UNICEF, 2012). This is a typical illustration of the high sensitivity of child health outcomes to regional and socioeconomic differentials.

In the context of South Africa, two separate surveys [that is, the 1992 Human Science Research Council Survey (HSRC), and the 2003 South Africa Demographic and Health Surveys (SADHS)] both demonstrated the deteriorating indicators for early childhood mortality since 1990s. By 2003 the estimated mortality rates for children in the age groups 0-4, 5-9 and 10-14 were as high as 58, 49 and 33 per 1,000 live births, respectively (Department of Health et al., 2007).

In 2011 the World Health Organisation reported a further increase in South Africa’s under 5 mortality rate per 1,000 live births from 58 in the year 2003 to 62 in 2009. Detailed analysis of these mortality indicators show the uneven distribution across the country, with some places having worse health outcomes than others.

“Where you live makes a difference to your health over and above who you are” - (Jones & Moon, 1993; Robberts, 1999; Berkman and Kawachi, 2000; McIntyre, 2000; cited in Subramanian et al. 2003: 65)
The above excerpt resounds with observable differentials in health outcomes that exist not only across countries but also within countries and provinces. Analysing the 1998 Dutch Housing Demand Survey data, Mohnen, Völker, Flap, & Groenewegen (2012) found that individuals were more physically active and more likely to be non-smokers in neighbourhoods that had higher levels of social capital - behaviours that are positively associated with good health. A similar study in Australia by Ziersch, Baum, Macdougall, & Putland (2005) linked some social aspects of neighbourhoods such as perceptions of safety, civic activities and availability of social services to health outcome.

Within the City of Cape Town in South Africa, despite being adjacent communities, Khayelitsha and Mitchell’s Plain display very contrasting indicators of health outcomes. Infant mortality per 1,000 births for instance is as high 35 in Khayelitsha while only 19 in Mitchell’s Plain. Khayelitsha community experiences the highest mortality burden among Cape Town sub-districts. For example, the age-standardised broad-cause mortality rate in Khayelitsha (at 1,684.8 deaths per 100,000) is more than twice that of the Southern sub-district at 685.1 deaths per 100,000 (MRC et al., 2006).

Health research have in the past tended to focus on medical-related determinants in an attempt to understand such health disparities (Marmot & Wilkinson, 2006; Kemenade, 2003a; Ashley & Carney, 1999; Rakodi, 1999). However, experience has shown that focus on these determinants alone fails to sufficiently explain why the health gaps have kept on widening (Wilkinson, 1996). This backdrop has prompted the shift of interest towards health research that examines social determinants in understanding structural causes of health disparities.

Health-seeking behaviours, social capital and child health

Caregivers’ health-seeking behaviour for children in terms of choice of healthcare providers and how soon they make such decisions has a significant bearing on the levels of child survival. Social determinants in general, and social capital in particular, are among the areas that are increasingly being acknowledged as being pertinent in influencing health outcomes (Knack & Keefer, 1997; Pickett & Pearl, 2001). Understanding social capital determinants of healthcare-seeking behaviour in the context of neighbourhoods or local area characteristics within urban settings can help inform the development of health policies that are more responsive to local populations.

Empirical investigation of determinants of healthcare seeking

A few studies have yielded different magnitude and sometimes different signs of coefficients of healthcare seeking determinants. However, there has been overwhelming consensus of theory on
the signs and coefficients of predictors of healthcare seeking. Among the notable predictor variables used to analyse the demand for healthcare include age, education, income and cost of treatment. Others are distance to facility, gender, age of sick child and perceived severity of illness. Reviewed literature has shown income to be strongly positively associated with increased healthcare utilisation. Similarly age, gender and education are also strongly associated with healthcare seeking practices. Many studies have supported the negative implication of healthcare costs and distance to facility on healthcare utilisation (Geest et al., 2000; McIntyre et al., 2009). The South Africa Demographic and Health survey also reported cost as a major factor impeding access to health care, particularly among women (Department of Health et al., 2007). Gender is another important determinant of care seeking. Similarly, Mwabu et al. (1994) found that although both distance and user fees reduced demand for healthcare, men were less constrained than women. In the same study, when compared to under-five children, older children had generally less healthcare utilisation. Finally individuals’ perception of severity of illness is associated with increased utilisation of health care (Akin & Hutchinson, 1999; Burton et al., 2011; Dzator & Asafu-Adjaye, 2004).

**Study objectives**

The overall objective of this study was to investigate household social capital factors which are associated with prompt and appropriate health-seeking behaviour of parents and caregivers when their children become ill with common childhood illnesses in the context of urban neighbourhoods, using the case of Khayelitsha Township in Western Cape Province, South Africa.

Specifically, the study was aimed at:

- Identifying the types of social capital at household and community levels in Khayelitsha,
- Determining the households’ healthcare provider choices when their children become ill in Khayelitsha,
- Investigating whether the different Khayelitsha neighbourhoods have significant independent effect on individual’s healthcare seeking behaviour.

**Conceptual framework**

With the backdrop of the reviewed literature our study’s conceptual framework was centred on caregivers’ response to children’s illness. Therefore, we used prompt healthcare-seeking and type of care provider choice as the main outcome variables. Healthcare-seeking behaviour is assumed to be shaped by socio-demographic, economic and social capital factors. Hence, the explanatory variables
have been broadly categorised into two components (i) social capital, and (ii) demographic/ socioeconomic.

Prompt health-seeking behaviour was operationally defined as a parent or caregiver seeking care within 24 hours of being aware of one’s child’s illness. The options for health-care provider choices include public or private sectors, (that is, chemist, pharmacy or market) or from traditional and faith healers. Other options are seeking care from a dentist, self-medication and home remedies and not seeking any care at all.

Further, our conceptual framework recognised the underlying hierarchical nature of the neighbourhood contexts within which the households as study elements are embedded, and the potential differentials in outcomes that may result from influence of neighbourhood–associated characteristics. Therefore two levels were identified: the household being the lower level and neighbourhood at higher level in hierarchy.
CHAPTER 2: METHODS

Study design

A cross-sectional survey was conducted on 309 households in Khayelitsha Township in the Western Cape Province of South Africa. The study’s outcome variable was health-seeking behaviour. Predictor variables consisted of individual socio-demographic, economic and social capital characteristics at household levels. The study’s contextual variable was the name of neighbourhood.

Population and sampling strategy

Study population

The study population comprised of all the households in the urban and peri-urban neighbourhoods of Khayelitsha Township. The Township is located in the wider Mitchell’s Plain Magisterial District located on the Cape Flats about 30 km from the Cape Town central business district.

Khayelitsha Township has important notable neighbourhood-related socioeconomic variability which the study used as a cluster-level contextual variable. The Township comprises of both urban settlements and newer informal settlements that can be classified as peri-urban. The old formal settlements comprise mostly of middle- and upper-working class populations. Conversely, the newer peri-urban settlements consist mostly of informal structures built around the older areas. For the purpose of this study, Khayelitsha Township was categorised into neighbourhoods aligned with the 2001 census enumeration areas (Department of Health et al., 2007).

Sampling strategy and sample size

Household survey (n = 309):

The study was implemented through a household survey using a two-stage stratified cluster sampling. To facilitate this, the study population was demarcated into neighbourhoods according to 2001 census enumeration areas (CEAs). The CEAs are neighbourhoods each with about 50 and 200 households that share homogeneity in some characteristics such as socioeconomic status, housing type and size (SALDRU et al., 2003). The rationale for using two-stage stratified cluster sampling is that it was both cost-efficient and enabled us to draw of a representative sample given the vast spread of the study population (Crankshaw & Welch, 2001; Joubert & Ehrlich, 2007).
**Sample size:**

A total of 24 neighbourhoods were included in the survey. We sampled between 10 and 16 households from each neighbourhood using systematic random sampling to arrive at a total of 309 households. The sample size was determined based on a desired precision level of 5%, an anticipated proportion among the outcome variables of 20% and a confidence interval of 95%. We initially arrived at 246 households as the minimum required sample size. The following formula and parameters were used to determine the minimum required sample size \( n \) of the number of households to be included in the survey:

\[
   n = \frac{p(1 - p)z^2}{d^2}
\]

\[
   = \frac{0.2(1 - 0.2)1.96^2}{0.05^2}
\]

\[
   = \frac{0.614656}{0.0025}
\]

\[
   = 245.8 \approx 246
\]

Where:

- \( n \rightarrow \) the minimum required sample size;
- \( p \rightarrow \) the anticipated population proportion (estimated from previous studies at 20%);
- \( d \rightarrow \) the desired precision on either side of the proportion (equal to 5%), and;
- \( z \rightarrow \) z-score corresponding to the 95% desired level of confidence (equal to 1.96).

However, following the Crankshaw & Welch’s (2001) Khayelitsha/Mitchell’s Plain study where the non-response rate was estimated at 20%, we made a similar adjustment and oversampled by 22% to factor for potential non-responses, therefore increasing the final sample size to 309 households.

**Measurement**

**Study instruments**

Data was collected through face-to-face interviews using a structured questionnaire (*Appendix II*) that was administered to caregivers aged 18 years or older from a sample of 309 households in Khayelitsha Township.
Pretesting of instruments

A pre-test of study instruments was conducted on 4 households in Khayelitsha Township. This enabled us to check for and correct potential issues of consistency, sensitivity, format, wording and clarity of questions and instructions that could have negatively affected data collection and analysis.

Study variables

**Outcome variables:** The study’s outcome variable was divided into three parts, namely: (i) whether or not the caregivers sought health care the last time their child presented with an illness, (ii) if they sought care, their first choice of healthcare provider, and; (iii) how soon healthcare was sought upon discovering a child’s illness.

**Explanatory variables:** The study’s predictor variables for healthcare-seeking behaviours of parents in Khayelitsha were grouped under demographic, socioeconomic and social capital categories. We included the variables into our model based on their theoretical and substantive significance based on the reviewed literature. Table 1 below gives a summary of the variables for use in the study.

**Table 7: Conceptual and operational definitions of study variables**

<table>
<thead>
<tr>
<th>Conceptual definition</th>
<th>Operational definition/type</th>
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<tbody>
<tr>
<td><strong>Outcome variable:</strong></td>
<td></td>
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<tr>
<td>Health-seeking behaviour of caregiver when a child is ill.</td>
<td>Criterion for inclusion: Respondent had to recall whether or not any child in the sampled household became ill at 4 weeks prior to the interview (binary variable – household excluded if answer was ‘NO’). (iii) Whether or not the sick child’s caregiver had sought any healthcare within 24 hours (binary variable). (iv) If sought care, type of health care provider sought as first choice</td>
</tr>
<tr>
<td><strong>Predictor variables:</strong></td>
<td>Household level:</td>
</tr>
<tr>
<td>Demographic, socioeconomic and social capital variables</td>
<td>• Gender of sick child,</td>
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<tr>
<td></td>
<td>• Caregiver’s perception of severity of illness,</td>
</tr>
<tr>
<td></td>
<td>• Caregiver’s previous experience of deprivation from health services,</td>
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<tr>
<td></td>
<td>• Caregiver’s age, occupation, education level</td>
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<td></td>
<td>• Household income,</td>
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<td></td>
<td>• Collective action and participation in the local community associations,</td>
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<td></td>
<td>• Perceptions of trust in the community,</td>
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<tr>
<td></td>
<td>Contextual/Neighbourhood level:</td>
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<td></td>
<td>(i) Name of neighbourhood</td>
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3 Empirically tested social capital variables adapted from the World Bank (2012) and other resources.
Model analysis focused on whether the caregiver sought healthcare as our main outcome variable. The other two outcome variables were only used for descriptive purposes. Except for numerical continuous variables, all the predictor variables were converted into binary (that is, coded 0 or 1). Table 8 below gives further detail on the variables used in the study.

Table 8: Variable definitions

<table>
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<td></td>
</tr>
<tr>
<td>Whether caregiver sought healthcare for sick child upon realising onset of illness</td>
<td>sought_treat</td>
<td>Binary</td>
<td>0 = No</td>
<td>1 = Yes</td>
</tr>
<tr>
<td>How soon care was sought after realising child’s illness</td>
<td>When_treat</td>
<td>Binary</td>
<td>0 = After 24 hours upon realising child’s illness</td>
<td>1 = Within 24 hours of child’s illness</td>
</tr>
<tr>
<td>Type of provider choice options</td>
<td>Where_treat</td>
<td>Binary</td>
<td>0 = Private</td>
<td>1 = Public</td>
</tr>
<tr>
<td><strong>Predictor variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status: Caregiver’s marital status</td>
<td>resp_mstatus</td>
<td>Binary</td>
<td>0 = Not unmarried</td>
<td>1 = Married (Comparison category: Married)</td>
</tr>
<tr>
<td>Education: Highest level of education attained by caregiver</td>
<td>resp_educat</td>
<td>Binary</td>
<td>0 = Primary or no formal education</td>
<td>1 = At least secondary or higher level of education</td>
</tr>
<tr>
<td>Occupation: Whether caregiver is employed or not</td>
<td>resp_employ</td>
<td>Binary</td>
<td>0 = Unemployed</td>
<td>1 = Employed (Comparison group: Employed)</td>
</tr>
<tr>
<td>Religion: Caregiver’s religion</td>
<td>religion</td>
<td>Binary</td>
<td>0 = Non-Christian</td>
<td>1 = Christian (Comparison category: Christian)</td>
</tr>
<tr>
<td>Income: Household level of income</td>
<td>hh_income</td>
<td>Continuous</td>
<td>R200 - R9,000</td>
<td></td>
</tr>
<tr>
<td>Age: Age of sick child</td>
<td>age_child</td>
<td>Continuous</td>
<td>0 – 17 years</td>
<td></td>
</tr>
<tr>
<td>Gender: Child’s sex</td>
<td>sex_child</td>
<td>0 = Girl</td>
<td>1 = Boy</td>
<td></td>
</tr>
<tr>
<td>Illness severity: Caregiver’s perception of the severity of child’s illness</td>
<td>perp_ill</td>
<td>Binary</td>
<td>0 = Not severe</td>
<td>1 = Severe (Comparison category: Severe)</td>
</tr>
<tr>
<td>Exclusion: Whether caregiver ever experienced exclusion from health services</td>
<td>exclusion</td>
<td>Binary</td>
<td>0 = No</td>
<td>1 = Yes (Comparison category: Yes)</td>
</tr>
<tr>
<td>Trust: Caregiver’s perceptions of whether the level of trust in the community has gotten better over the last few years</td>
<td>trust_better</td>
<td>Binary</td>
<td>0 = No</td>
<td>1 = Yes (Comparison category: Yes)</td>
</tr>
<tr>
<td>Membership in associations: Whether caregiver or someone in the household is a member of community groups, organisations or associations</td>
<td>memb_assoc</td>
<td>Binary</td>
<td>0 = No</td>
<td>1 = Yes (Comparison category: Yes)</td>
</tr>
<tr>
<td>Participation: Whether caregiver has jointly worked together in community projects</td>
<td>joint_work</td>
<td>Binary</td>
<td>0 = No</td>
<td>1 = Yes (Comparison category: Yes)</td>
</tr>
<tr>
<td>Democratic governance: Whether caregiver voted in previous elections at community of local government levels</td>
<td>vote</td>
<td>Binary</td>
<td>0 = Did not vote</td>
<td>1 = Voted (Comparison category: Voted)</td>
</tr>
</tbody>
</table>
Data management and analysis

Data entry and cleaning

We used Epi-Info software version 3.5.3 (CDC, 2011) for data entry and cleaning. For preliminary data cleaning, we used utilised the Epi-Info’s *Duplicate and Validate function* to track and correct consistency and processing errors in the data. The data was then exported to and analysed in Stata 11 (StataCorp., 2009).

Data analysis

Our study involved caregivers of children as units of analysis within two hierarchical levels – the household and the neighbourhoods. Therefore, we used multilevel modeling to allow for cross comparisons of predictors of healthcare-seeking behaviours both within-neighbourhood and between-neighbourhood. We conducted multilevel logistic regression using Stata version 11 (StataCorp., 2009).

We first performed univariate analysis to establish statistical significance of the predictors and, as recommended by (Hosmer & Lemeshow, 2000). We only included in the model predictors that were relatively strongly associated with the outcome variable (that is, those with $p \leq 0.25$). We also conducted further diagnostics and tests for multicollinearity by including or dropping predictor variables to determine their effect on healthcare seeking. Two models were then used in our hierarchical analysis: *Model 1* analysed the null model with only contextual variable while *Model 2* constituted both individual and contextual covariates.

Ethical approval and consent

We obtained ethical clearance from the Human Research Ethics Committee (HREC) to ensure that our study conformed to the minimum ethical principles. Participation in the study was voluntary and informed consent was obtained before each interview. Only consenting adults aged 18 years or older participated in the study. An information and consent document (*see appendix I*) was read out to all participants prior to every interview. Upon understanding the study information, individuals who wished to volunteer to participate in the study were required to acknowledge their participation by signing the statement of consent on the information and consent document. To ensure confidentiality, we used unique identifiers of participants on all the questionnaires and all the questionnaires and informed consent documents were stored in a secured place with restricted access to the research team.
CHAPTER 3: RESULTS

Socio-demographic characteristics

The surveyed Khayelitsha neighbourhoods

Twenty-four neighbourhoods in Khayelitsha Township were included in the survey as shown in Table 9 below. These neighbourhoods were aligned to the census enumeration areas (CEAs) as classified by the SADHS2007.

Table 9: Khayelitsha Township’s 24 neighbourhoods included in the study (n=309).

<table>
<thead>
<tr>
<th>Name of neighbourhood</th>
<th>Number of households sampled</th>
<th>Percent (%)</th>
<th>Name of neighbourhood</th>
<th>Number of households sampled</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Chris Hani</td>
<td>14</td>
<td>4.50%</td>
<td>14. Site B</td>
<td>13</td>
<td>4.20%</td>
</tr>
<tr>
<td>3. Ekphumuleni</td>
<td>10</td>
<td>3.20%</td>
<td>15. Site B - B Section</td>
<td>12</td>
<td>3.90%</td>
</tr>
<tr>
<td>4. Graceland</td>
<td>16</td>
<td>5.20%</td>
<td>16. Site B - F Section</td>
<td>11</td>
<td>3.60%</td>
</tr>
<tr>
<td>5. Green Point</td>
<td>13</td>
<td>4.20%</td>
<td>17. Site B - Q Section</td>
<td>15</td>
<td>4.90%</td>
</tr>
<tr>
<td>6. Harare</td>
<td>15</td>
<td>4.90%</td>
<td>18. Site B - RR section</td>
<td>12</td>
<td>3.90%</td>
</tr>
<tr>
<td>7. Honolulu</td>
<td>11</td>
<td>3.60%</td>
<td>19. Site B - TR Section</td>
<td>12</td>
<td>3.90%</td>
</tr>
<tr>
<td>8. Hyde Park</td>
<td>13</td>
<td>4.20%</td>
<td>20. Site B - UT Section</td>
<td>12</td>
<td>3.90%</td>
</tr>
<tr>
<td>9. Kuyasa</td>
<td>12</td>
<td>3.90%</td>
<td>21. Site C</td>
<td>11</td>
<td>3.60%</td>
</tr>
<tr>
<td>10. Litha Park</td>
<td>11</td>
<td>3.60%</td>
<td>22. Tafelsig</td>
<td>11</td>
<td>3.60%</td>
</tr>
<tr>
<td>11. Makaza</td>
<td>15</td>
<td>4.90%</td>
<td>23. Taiwan</td>
<td>14</td>
<td>4.50%</td>
</tr>
<tr>
<td>12. Mandela Park</td>
<td>16</td>
<td>5.20%</td>
<td>24. Tembani</td>
<td>15</td>
<td>4.90%</td>
</tr>
</tbody>
</table>

Respondents’ gender, age and marital status

A total of 309 caregivers participated in this study. Of these, 263 (85%) were women and 46 (15%) were men. The median age of the surveyed caregivers was 33 years with inter-quartile range (IQR) of 27.8 – 42.8 years. Nearly half of the respondents 162 (52%) were married or in consensual union, and over a third 121 (39%) were single. Twenty-five (8%) of the surveyed respondents were widowed, separated or divorced.

Respondents’ education

Majority of the surveyed caregivers 186 (60.2%) had attained up to secondary school level of education. Thirty-two (10.4%) had reached primary level while 46 (14.9%) and 37 (12.0%) had reached college and
university levels of education, respectively. Eight (2.6%) of the respondents indicated not having attended any formal education at all.

**Household income**

The monthly income for the surveyed households ranged between R200 and R9,000 with mean of R2,257 (median R1,500) and inter-quartile range (IQR) of R1,177 – R3,337. As shown in Table 10, majority of the households 198 (65.1%) earned up to R2,500 per month while 85 (28.0%) of them earned between R2,501 and R5,000. Fifteen (4.9%) of the households earned between R5,001 and R7,500 and only 6 (2.0%) households earned more than R7,500 per month.

<table>
<thead>
<tr>
<th>Household Monthly Income</th>
<th>n</th>
<th>(Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than R2,501</td>
<td>198</td>
<td>(65.1%)</td>
</tr>
<tr>
<td>R2,501 - R5,000</td>
<td>85</td>
<td>(28.0%)</td>
</tr>
<tr>
<td>R5,001 - R7,500</td>
<td>15</td>
<td>(4.9%)</td>
</tr>
<tr>
<td>Above R7,500</td>
<td>6</td>
<td>(2.0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>304</td>
<td>(100.0%)</td>
</tr>
</tbody>
</table>

**Respondents’ occupation**

Majority of the respondents 190 (61.5%) were unemployed. This was followed by 106 (34.3%) who were in formal employment and 13 (4.2%) who were in informal employment.

**Spouse’s employment**

Of the surveyed caregivers, 122 indicated being married or having spouses. For those that indicated having a partner, seventy-nine (64.8%) of their spouses were in formal employment compared to only 6 (5.0%) that were in informal employment. The rest 37 (30.3%) of their spouses were unemployed.

**Respondent’s religion**

Christians constituted the majority of the respondents 266 (86.6%), among whom included Catholic, Protestant, Pentecostal or other Christian. Traditionalists constituted 35 (11.4%) while only 4 (1.3%) were Moslem, and 2 (0.7%) were classified under ‘Other’ religion. Table 11 gives a breakdown of respondents by religion.

**Respondents’ race**

The survey respondents also largely constituted Black African 292 (94.5%) compared to 16 (5.2%) who were Coloured and only 1 respondent (0.3%) who was White.
Gender and age of the children

The median age of all the children in the survey was 5 years, with an inter-quartile range (IQR) of 2.7–9.7 years. One hundred and sixty (51.8%) of the children included in the survey were girls while 149 (48.2%) were boys.

Perceived severity of illness of children

Of the 309 respondents, 62 (20.1%) indicated that their child’s illness was mild; 101 (32.7%) indicated that the illness was moderate; and 146 (47.25%) said that their child’s illness was severe, as depicted in Table 14.

Household’s social capital characteristics

Exclusion from accessing services

We further investigated the caregivers’ experience of exclusion from health services in their neighbourhoods by asking them whether they or members of their household were in the past occasionally denied health services or only had limited opportunity to use the service. Two hundred and seventy-nine (91.2%) denied having experienced any exclusion from accessing health services while 27 (8.8%) said they had occasionally experienced some form of exclusion.

Participation and collective action

We measured ‘participation’ through a set of questions on caregivers’ membership in community associations, on participation in voting during local government or presidential elections, and on getting involved in joint

---

Table 11: Frequency and percentage of demographic characteristics of respondents.

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondents’ gender</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Female                      | 263 | 85.1%
| Male                        | 46  | 14.9%
| Total                       | 309 | 100.0%
| **Respondents’ age**        |     |      |
| 10–19 years                 | 9   | 3.0%
| 20–29 years                 | 100 | 33.7%
| 30–39 years                 | 90  | 30.3%
| 40–49 years                 | 60  | 20.2%
| 50–59 years                 | 28  | 9.4%
| 60–69 years                 | 7   | 2.4%
| 70 years & older            | 3   | 1.0%
| Median                      | 33  |      |
| Inter-quartile range (IQR)  | 27.8–42.8 years |
| Total                       | 297 | 100.0%
| **Respondents’ marital status** |     |      |
| Single                      | 122 | 39.5%
| Married                     | 157 | 50.8%
| Consensual union            | 5   | 1.6%
| Widowed                     | 22  | 7.1%
| Divorced                    | 3   | 1.0%
| Total                       | 309 | 100.0%
| **Respondents’ education**  |     |      |
| No formal education         | 8   | 2.6%
| Primary                     | 32  | 10.3%
| Secondary                   | 186 | 60.2%
| College                     | 46  | 14.9%
| University                  | 37  | 12.0%
| Total                       | 309 | 100.0%
| **Household monthly income** |     |      |
| R0.000–R2,500               | 198 | 65.1%
| R2,501–R5,000               | 85  | 28.0%
| R5,001–R7,500               | 15  | 4.9%
| Above R7,500                | 6   | 2.0%
| Median                      | R1,500 |
| Inter-quartile range (IQR)  | R1,177–R3,337 |
| Total                       | 304 | 100.0%
| **Respondents’ occupation** |     |      |
| Formal employment           | 106 | 34.3%
| Informal employment         | 13  | 4.2%
| Unemployed                  | 190 | 61.5%
| Total                       | 309 | 100.0%
| **Respondent’s religion**   |     |      |
| Christian                   | 266 | 86.6%
| Moslem                      | 4   | 1.3%
| Traditional                 | 35  | 11.4%
| Other                       | 2   | 0.7%
| Total                       | 307 | 100.0%
| **Respondents’ race**       |     |      |
| Black African               | 292 | 94.5%
| Coloured                    | 16  | 5.2%
| White                       | 1   | 0.3%
| Total                       | 309 | 100.0%
work at community level.

**Membership in associations:** We asked participants whether they or someone in their household was a member of any groups, organizations or associations in the community. A total of 271 responded to this question. Of these, 184 (67.9%) said none of the household members belonged to any association while 87 (32.1%) said they or some member of the household belonged to a community association, as shown in *Figures 2 & Table 12*.

**Voting:** We also asked the participants whether in the three years prior to the study they had personally voted in an election at community level, in local government or presidential elections. Seventy-three (23.9%) said they had not participated in any election, while 233 (76.1%) said they had participated in an election.

**Collective action:** We asked the caregivers how often in the year prior to the survey they had with other members of their neighbourhood gotten together to jointly petition government officials or political leaders on issues relating to neighbourhood development. Of the 307 who responded to this question, 149 (48.5%) said they had never jointly petitioned together with others in the community. A further 123 (40.1%) said they had jointly petitioned together only once; 29 (9.5%) said they had done so a couple of times; while only 6 (2.0%) said they had done so on frequent occasions. The results are summarised in *Table 12*.

**Level of trust**

On trust, we asked the caregivers whether they thought over the last few years the level of trust in their neighbourhood had gotten better, gotten worse, or stayed about the same. Of the 309 respondents, 101
(32.7%) stated that the level of trust had improved over time. However, the majority 153 (49.5%) indicated that the level of trust had remained the same while only 55 (17.8%) stated that the level of trust had deteriorated.

We also asked the caregivers about whether they agreed or disagreed to the statement that people in their neighbourhood looked out mainly for the welfare of their own families and not much concerned with their neighbourhood’s welfare. Majority of the respondents 120 (39.2%) agreed to this statement and 76 (24.8%) agreed strongly. On the other hand, 84 (27.5%) disagreed to the statement, with 26 (8.5%) disagreeing strongly. *Figure 4 & Table 12* show the summary of results on trust.
Figure 1: Number of caregivers who had voted in an election (n=306).

Figure 2: Number of caregivers who had membership in associations (n=271).

Figure 3: Perceptions on trends of trust over last few years (n=309).

Figure 4: People focus on welfare of own families? (n=306)

Figure 9: Whether sought treatment for sick child (n=309)

Figure 6: How soon caregiver sought treatment for child (n=295).
Health seeking behaviour

We investigated healthcare seeking behaviour using a set of three questions, namely: i) whether a caregiver sought any treatment the last time they discovered that one of their children was ill; (ii) what type of treatment was sought; and (iii) how soon the treatment was sought. Therefore the inclusion criterion for the study participants was that the sampled caregivers had at least to recall their child falling sick in the most recent past. Respondents who could not remember the last time one of their children became ill were excluded from the analysis.

Caregivers who sought treatment for their sick children

Caregivers were also asked whether they sought treatment or not the most recent time they discovered that any of their children was ill. Of the 309 respondents, only 73 (23.6%) said they did not seek treatment at all. The rest 236 (76.4%) sought some form of treatment as shown in Figure 5 & Table 13.

Promptness of seeking treatment for sick child

Two hundred and ninety-five respondents answered the question on how soon they sought treatment after discovering that their child was ill. Of these, 79 (26.8%) sought treatment within 24 hours of being aware of their child’s illness while 216 (73.2%) sought treatment after 24 hours. Figure 6 and Table 14 show the healthcare seeking patterns among the sampled households.

Caregivers’ treatment options for their ill children

We also asked the caregivers about the first point of care where they sought treatment after realising their child’s illness. We emphasised that they indicate their first point of care they actually went to because we recognised the possibility of them seeking care from more than one source for a single episode of a child’s illness. As shown in Table 13 majority of respondents 189 (80.1%) said they sought care from a public health facility; 14 (5.9%) sought care from a private health facility and 22 (9.3%) sought care from a chemist/pharmacy and 4 (1.7%) from the market. Only 3 (1.3%) sought care from traditional healers, and 1 (0.4%) from faith healers. The remaining 3 (1.3%) could not remember where they sought care for the sick child.

| Table 13: Caregiver treatment choices for children (n=301). |
|---------------------------------|-----|------|
| **Treatment choice** | **n** | **(Percent)** |
| Public facility | 189 | (80.1%) |
| Private facility | 14 | (5.9%) |
| Chemist/Pharmacy | 22 | (9.3%) |
| Market | 4 | (1.7%) |
| Traditional healer | 3 | (1.3%) |
| Faith healer | 1 | (0.4%) |
| Don’t remember | 3 | (1.3%) |
| **Total** | **236** | **(100.0%)** |
Predictors of health seeking behaviour

We classified the study’s predictor variables at two hierarchical levels. Level I predictor variables included individuals’ socio-demographic and social capital characteristics. Socio-demographic predictors included the caregiver’s age, gender, marital status, education, occupation, religion, race, household income, child’s gender and age, and perception of severity of illness. Social capital predictors were experience of exclusion, trends in trust, membership in associations and collective action. The level II variable was place of residence in terms of neighbourhoods in Khayelitsha Township from which households were drawn.

We conducted bivariate analysis of the association between key each of predictor variables on the one hand and treatment seeking by the caregiver as the outcome variable on the other hand.

**Socio-demographic predictors:** We did not find any significant relationship between the respondent’s gender and seeking healthcare for their child (p>0.05). Similarly, there was no significant association between caregiver’s age and seeking treatment (p>0.10). However, we discovered a strong association between health seeking and respondents’ marital status (p<0.01). Similarly, caregiver’s level of education and their occupation were both highly associated with healthcare seeking for their ill children (p<0.001). Nevertheless, the employment status of the caregiver’s spouse seemed not to matter much; there was no significant association between the employment status of the spouse and the caregivers ‘health seeking behaviour. In addition, neither caregivers’ religion nor race were significantly associated with caregivers seeking care the last time a child was ill (p>0.05).

<table>
<thead>
<tr>
<th>Health-seeking characteristics</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender and age of the children included in the survey</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 years</td>
<td>151</td>
<td>50.2%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>88</td>
<td>29.2%</td>
</tr>
<tr>
<td>11-18 years</td>
<td>62</td>
<td>20.6%</td>
</tr>
<tr>
<td>Inter-quartile range (IQR)</td>
<td>2.7–9.7 years</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Perceived severity of illness of children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>62</td>
<td>20.1%</td>
</tr>
<tr>
<td>Moderate</td>
<td>101</td>
<td>32.7%</td>
</tr>
<tr>
<td>Severe</td>
<td>146</td>
<td>47.3%</td>
</tr>
<tr>
<td><strong>Caregivers who sought treatment for their ill child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sought treatment</td>
<td>236</td>
<td>76.4%</td>
</tr>
<tr>
<td>Did not seek treatment</td>
<td>73</td>
<td>23.6%</td>
</tr>
<tr>
<td><strong>Where treatment was sought</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public facility</td>
<td>241</td>
<td>80.1%</td>
</tr>
<tr>
<td>Private facility</td>
<td>19</td>
<td>6.3%</td>
</tr>
<tr>
<td>Chemist of Pharmacy</td>
<td>29</td>
<td>9.6%</td>
</tr>
<tr>
<td>Market</td>
<td>5</td>
<td>1.7%</td>
</tr>
<tr>
<td>Traditional Healer</td>
<td>3</td>
<td>1.0%</td>
</tr>
<tr>
<td>Faith healer</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>309</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>How prompt caregivers sought treatment for their child:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within 24 hours</td>
<td>216</td>
<td>73.2%</td>
</tr>
<tr>
<td>After 24 hours</td>
<td>79</td>
<td>26.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>295</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 14: Frequency and percentage of study variables.
Social capital predictors: The results showed that caregivers who had in the past experienced some form of exclusion from health services were more likely to be affected in terms of seeking treatment for their sick children. That is to say, there was a strong association between exclusion and healthcare seeking behaviour (p<0.05). Nevertheless, the analysis did not demonstrate any significant association between caregiver’s membership in community associations, participation in voting or participation in community collective action to petition for local development projects (p>0.05).

With regards to caregivers ‘perceptions of levels of trust in the community, we found a significantly strong association between treatment seeking and caregivers ‘perceptions of trust in their neighbourhood in terms of whether they felt levels of trust had improved, was the same or had deteriorated over the years (p<0.01). However, we did not find a strong association between treatment seeking and caregivers who agreed or disagreed to the statement that people in their neighbourhood mainly looked out for the welfare of their own families.

As for the perceived severity of illness of the child, we discovered that this was also strongly associated with health seeking for their children (p<0.01). Further, gender and age of the child did influence health seeking by the caregivers. Results of the study showed a significantly strong association between caregiver seeking treatment for their sick child the sick child’s gender (p<0.01). Specifically, we established that if the sick child were a male, the caregiver was more likely to seek healthcare treatment compared to if the sick child was a girl [Odds Ratio (OR): 3.5; Confidence Interval (CI): 1.9470 - 6.2399; p<0.001].

Multilevel modeling of effects of neighbourhood on healthcare seeking

The null model

The neighbourhoods in Khayelitsha served as Level II grouping variable. Therefore, the null model that allows only for effects of the neighbourhoods on caregivers’ healthcare seeking without individual (Level I) predictor variables is given by:

\[ HSB_{ij} = \beta_0 + \mu_{ij} + \epsilon_{ij} \]  

\( (Equation 1) \)
Where:
- \( \text{HSB}_{ij} \) → is the propensity for caregiver to seek healthcare (1 = Sought care; 0 = Did not seek care) for household with caregiver in the \( j \)th neighbourhood.
- \( \beta_0 \) → is the overall mean across the surveyed Khayelitsha neighbourhoods.
- \( \mu_{0j} \) → is the effect of the neighbourhood \( j \) on healthcare seeking.
- \( e_{ij} \) → is the caregiver-level residual.

Our model assumed that the Khayelitsha neighbourhood effects are normally distributed \([N(\mu, \sigma^2)]\), with mean zero and variance \( \sigma^2_{\mu_0} \). Analysis of the null model showed that in an average Khayelitsha neighbourhood with mean \( (\mu_0=0) \) the log-odds \( \hat{\beta}_0 \) of a caregiver seeking healthcare for a sick child is estimated at 1.3510. The intercept for a \( j \)th neighbourhood is given by 1.3510 + \( \mu_{0j} \), with the variance \( (\sigma^2_{\mu_0}) \) for \( \mu_0 \) estimated as 0.7913. Neighbourhoods with \( \mu_{0j}>0 \) have a mean higher than average neighbourhood. Conversely, those with \( \mu_{0j}<0 \) have mean below an average neighbourhood. The likelihood ratio statistic for testing the null hypothesis (that is, \( H_0: \sigma^2_{\mu_0} = 0 \)) is 12.44 with corresponding p-value of 0.0002. This confirmed the strong evidence that the between-neighbourhood variance is non-zero. We further confirmed this by visual inspection of the rank order caterpillar plot of residuals of the sampled 24 neighbourhoods with 95% confidence interval as shown in Figure 12 below.

We observed that the residuals of 2 (8.0%) of the surveyed neighbourhoods do not overlap the horizontal line at zero, indicating that the propensity of caregivers to seek healthcare in these neighbourhoods is significantly below average. As a limitation, however, we noted that the wide confidence intervals were due to the relatively small sample size within neighbourhoods, leading to larger standard errors for the estimated neighbourhood residuals.
The contextual model

We derived the full contextual model by including both neighbourhood-level random effect and individual-level fixed effect covariates. These included socio-demographic, social capital characteristics and the different neighbourhoods.

\[ \text{Logit}(HSB_{ij}) = \gamma_{00} + \gamma_{10}\text{resp\_mstat}_{ij} + \gamma_{20}\text{resp\_edu}_{ij} + \gamma_{30}\text{resp\_employ}_{ij} + \gamma_{40}\text{religion}_{ij} \\
+ \gamma_{50}\text{hh\_income}_{ij} + \gamma_{60}\text{race}_{ij} + \gamma_{70}\text{hh\_income}_{ij} + \gamma_{80}\text{age\_caregiver}_{ij} + \gamma_{90}\text{sex\_child}_{ij} \\
+ \gamma_{100}\text{resp\_age}_{ij} + \gamma_{110}\text{percep\_ill}_{ij} + \gamma_{120}\text{exclusion}_{ij} + \gamma_{130}\text{trust\_better}_{ij} \\
+ \gamma_{140}\text{memb\_assoc}_{ij} + \gamma_{150}\text{vote}_{ij} + \gamma_{01}\text{neigh}_{ij} \\
+ U_{ij} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 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\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldOTS
**Variance Partition Coefficient (VPC)**

Our outcome variable involved a binary response (1 = ‘Sought healthcare’ and 0 = ‘Did not seek healthcare’) whose underlying standard logistic distribution is represented by a continuous variable with threshold 0 through 1, and the Level 1 variance for this distribution is normalised to $\pi^2/3$ or 3.29 (T. Snijders & Bosker, 1999). Therefore, we considered 3.29 as the model’s Level 1 within-neighbourhood variance ($\sigma^2_e$). Analysing the null model, we estimated Level 2 between-neighbourhood variance ($\sigma^2_{\mu_o}$) as 0.7913. Given that both the Levels 1 and 2 variances are on the same scale, the total variance is given by their sum: $\sigma^2_{\mu_o} + \sigma^2_e = 0.7913 + \sigma^2_e$. Substituting $\sigma^2_e = 3.29$ we computed the total variance as 4.0813.

From this we estimated the VPC as $\rho = \frac{\sigma^2_{\mu_o}}{(\sigma^2_{\mu_o}+\sigma^2_e)} = \frac{\sigma^2_{\mu_o}}{(\sigma^2_{\mu_o}+\pi^2/3)} = \frac{\sigma^2_{\mu_o}}{(\sigma^2_{\mu_o}+3.29)} = \frac{0.7913}{4.0813} = 0.194$, implying that unobserved characteristics of the neighbourhoods where caregivers live account for 19.4% of the residual variations in their propensity to seek care for a sick child. Table 15 below shows the parameters estimates and standard errors of the null model with adjustments for the complete contextual model.

Table 15: Estimated log-odds coefficients ($\beta$) and standard errors (S.E.) of healthcare-seeking behaviour for neighbourhoods (Model 1); individual level socio-demographic and social capital characteristics (Model 2); and the complete model (Model 3).

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Model 1: Neighbourhood effects only/intercept only</th>
<th>Model 2: Adjusted for socio-demographic &amp; social capital variables</th>
<th>Model 3: Complete contextual model with all variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>S.E.</td>
<td>$\beta$</td>
</tr>
<tr>
<td><strong>Random Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.3510***</td>
<td>0.2447</td>
<td>-4.065808</td>
</tr>
<tr>
<td>Neighbourhood-level variance component ($\sigma^2_{\mu_o}$)</td>
<td>0.7913</td>
<td>0.4533</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver’s marital status (Married)</td>
<td>0.5041</td>
<td>0.5612</td>
<td>0.9054</td>
</tr>
<tr>
<td>Attained secondary or higher education</td>
<td>4.8165***</td>
<td>1.0297</td>
<td>4.9465***</td>
</tr>
<tr>
<td>Caregiver’s occupation (Employed)</td>
<td>-1.0839*</td>
<td>0.5268</td>
<td>-1.5221*</td>
</tr>
<tr>
<td>Caregiver’s religion (Christian)</td>
<td>1.2419</td>
<td>0.7512</td>
<td>1.7720</td>
</tr>
<tr>
<td>Caregiver’s race (Black African)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household income</td>
<td>-0.0692</td>
<td>0.1367</td>
<td>-0.0683</td>
</tr>
<tr>
<td>Caregiver’s age</td>
<td>0.0149</td>
<td>0.0234</td>
<td>0.0338</td>
</tr>
<tr>
<td>Sick child’s gender (Male)</td>
<td>2.0144**</td>
<td>0.6298</td>
<td>2.5091**</td>
</tr>
<tr>
<td>Sick child’s age</td>
<td>-0.2531***</td>
<td>0.0648</td>
<td>-0.2613**</td>
</tr>
<tr>
<td>Sick child’s illness severity (Severe)</td>
<td>3.8761***</td>
<td>0.7665</td>
<td>4.1683***</td>
</tr>
<tr>
<td>Caregiver’s previous experience of exclusion</td>
<td>-2.2202*</td>
<td>0.8596</td>
<td>-2.3979*</td>
</tr>
<tr>
<td>Caregiver’s perceived level of trust (Better)</td>
<td>0.8316</td>
<td>0.5049</td>
<td>0.9997</td>
</tr>
<tr>
<td>Caregiver’s membership in associations (Member)</td>
<td>0.0716</td>
<td>0.6105</td>
<td>0.3979</td>
</tr>
<tr>
<td>Whether caregivers jointly worked together (Yes)</td>
<td>-0.4796</td>
<td>0.3541</td>
<td>-0.4683</td>
</tr>
<tr>
<td>Voted in previous elections (Voted)</td>
<td>0.8476</td>
<td>0.6704</td>
<td>0.5847</td>
</tr>
<tr>
<td>Intraclass Correlation Coefficient ($\rho$)</td>
<td>0.1939</td>
<td></td>
<td>0.3655</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001

* Using ordinary logistic regression without neighbourhood / contextual variable.
CHAPTER 4: DISCUSSION

Our study has shown that socio-demographic characteristics play an important role in shaping healthcare seeking practices. Particularly, we discovered that healthcare-seeking and marital status, religion, education and caregiver’s age are positively associated. In contrast we did not find voting or membership in association to be associated with healthcare seeking. Interestingly, although there was a strong association between employment and healthcare seeking, the relationship was negative. This is in contrast with many other studies such as the one by Chola & Alaba (2013); Dor & Gaag (1987); Mbagaya et al. (1998); and Pickett & Pearl (2001) that found employment to be positively correlated with health outcomes. In addition, although pointing out that social relationships and work environments matters, the Factsheet on social determinants of health by the World Health Organisation highlights that unemployment puts individuals at health risk and that places with high unemployment tend to be associated with poor health outcomes (Centre, n.d.). Only one study from our reviewed literature by Ziersch, (2005) reported employment to be negatively associated with health outcomes. Our finding could be explained by the fact that full-time employed caregivers were constrained by time to take their sick children to healthcare provider. Ironically, we expected employed caregivers to earn more income compared to unemployed caregivers.

Further, our study found gender and age of the sick child to be an important predictor of healthcare seeking. Our results revealed that male children are nearly thrice as likely to be taken care of compared to female children when they are sick. This finding is similar to that by Mwabu et al. (1994). Evidence has shown that parents tend to promptly seek care when the sick child is a boy as opposed to a girl. One explanation for this is that the opportunity cost of seeking healthcare by females is higher than for males and that to a larger extent this prevents women and girls from accessing health services. For example, Mwabu et al. (1994) found that although both distance and user fees reduced demand for healthcare, men were less constrained to do so than women. Similarly, a study in Kenya by Burton et al. (2011) observed that trends in the use of public healthcare facilities was higher for boys compared to girls. With regards to age of the sick child, the same study discovered that older children had generally less health care utilisation when compared to under-five children. This also conformed to our findings on increasing propensity of caregivers to seek healthcare as the age of the sick children increased.
Our results also showed that caregivers are more likely to seek healthcare when they perceive the child’s illness to be severe. This finding conforms to the theory as in the *Health Belief Model* which highlights that an individual’s reaction to illness is influenced by such factors as the perceived risk to a given disease, perceived severity of the illness, perceived benefits if care is sought and perceived obstacles (Hausmann-Muela et al., 2003). The *Health Belief Model* adds that these beliefs are strengthened by cultural norms, religion and advice from relatives and friends.

Caregiver’s previous experience of deprivation from health services was another key determinant of healthcare seeking in our study. We assume that individuals who had been excluded from access to health services in the past would have negative perception of healthcare system and increased fear of repeat of the experience.

Caregiver’s education was equally important predictor of healthcare seeking in our study. The positive association could be attributed to the fact that educated caregivers are more cognisant of risks associated with delayed seeking of healthcare. Others such as Wilson (1996) have argued that tertiary educated residents in a neighbourhood create collective human capital which serves as a pool of resources for skills, jobs, connections and other opportunities outside their neighbourhood. Our findings on education also resonate with a recent study in South Africa by Chola and Alaba (2013) that showed that higher education is associated with better health outcomes. Comparing respondents with no education against those with tertiary education, the study found respondents with tertiary education to be more likely to report good health status. In general, our findings also follow Grossman’s model for demand for health and healthcare in which he demonstrates that the demand for health decreases with age and increases with income and education, and that the demand for health care increases with income (Grossman, 2004).

As regards income, substantive evidence has shown that poor households are the most predisposed to disease and illness burden. Ironically, however, our study showed that households with low income in Khayelitsha are also the most affected in terms of poor healthcare seeking practices when their children are ill. This could partly be due to their compromised ability to pay for healthcare and related costs.

As for social capital, previous studies have demonstrated positive correlation between social capital and health outcomes. This is because at community level, family, friends and networks serve as important assets that households draw upon to solve problems (Narayan, 1997). Studies have also showed that
communities endowed with rich stock of social networks and civic associations are more likely to confront issues of poverty and vulnerability (Putnam et al. 1993). All our social capital variables were positively associated with healthcare seeking although not statistically significant. Collective action, defined as respondents having participated in petitioning the government was used as an indicator of strong human capital among communities. We expected respondents who had participated in collective action to be more likely to seek healthcare when their children are sick. Similarly, we expected membership in associations to be associated with stronger human capital bonds. Being a member in an association is linked to enhanced resilience to societal shocks.

Finally, our study demonstrated that about 19.4% of variations in seeking health care for children are explained by unobserved differences between neighbourhoods. This increased to 36.6% upon inclusion of all the individual-level covariates. We postulate that different neighbourhoods within the same Khayelitsha study population display some significant degree of heterogeneity over and above individual-level predictors of healthcare seeking behaviour. We conclude that the neighbourhoods are spatial collections of populations that share similarities in cultural, socio-economic, and social capital characteristics which in turn impacts on average health outcomes of individuals within them, and that the level of this variation significantly different across neighbourhoods.

Study limitations

We noted a few limitations with our study. One limitation was concerned with responses that involved caregivers to recall a child’s illness. This limitation is associated to studies that involve self-reported behaviours. This is because individuals are more likely to remember events that occurred in the immediate than more distant past (Ryan, 1998). However, we attempted to minimise both the recall periods and the number of questions requiring respondents to remember events. Questions relying on respondents’ recall such as those on household’s income were limited to a month’s recall period prior to the survey.

Another limitation was the relatively small sample size. Although our sample of 309 met the minimum sample size requirements, we realised bigger standard errors for the estimated neighbourhood residuals. This could have been reduced if we had obtained a very large data set. However, we were constrained by budget and time. With this we recommend that similar studies in future adopt larger samples size preferably using census survey data as long as the key variables of interest are captured.
Finally, we have realised that since the data was collected in 2012, there has been a significant elapse of time, with possible corresponding expansions and changes of neighbourhoods and related characteristics of the Khayelitsha study population. This poses a limitation with regards to the extent to which we may generalise our findings to the same population as at present. The other limitation is the lack of inclusion of contextual variables such as socioeconomic status in the study which could have highlighted further social capital on healthcare seeking behaviour at neighbourhood level.
CHAPTER 5: CONCLUSIONS

Our literature review established significant gaps in empirical evidence from the Sub-Saharan Africa on social capital as predictors of health. This study contributes towards efforts to fill the gap. Although not statistically significant, our findings add to studies conducted elsewhere that factors relating to social capital such as trust, collective action and voting are strong predictors of healthcare seeking. Specifically the level of trust and collective action among community members positively correlate with the propensity to seek healthcare.

This study resounds with many other studies by confirming that individual-level socio-demographic factors including sex and age of a sick child, household income, caregiver’s age, education, marital status, caregiver’s perception of severity of illness and occupation as strong predictors of healthcare seeking behaviour for caregivers.

Our study further confirms that, over and above individual-level healthcare seeking predictors, a significant amount of the variability in the household’s propensity to seek healthcare is attributable to neighbourhood-level factors. Following these findings, our study reiterates the need to design health policies and interventions that are more responsive to the needs of populations of different neighbourhoods within communities, notwithstanding the importance of system-wide policy approaches.
REFERENCES


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Competing interests

The author declares no competing interests.

Authors’ Information

- Isaac Mwase is a student at the University of Cape Town in South Africa studying Masters in Public Health, specializing in Health Economics.
- Dr. Olufunke Alaba is a lecturer in the Health Economics Unit at the University of Cape Town in South Africa.

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PART D: APPENDICES
APPENDIX I: Information and Consent Document

a) Information sheet

Good morning/Good afternoon!

My name is ............... (interviewer to say their name). I am working as a Research Assistant on a research project being conducted by a student from the University of Cape Town. This research project is concerned about understanding how people in this community respond to common childhood illness when their children are sick and the reasons why they make those health-seeking decisions.

Your household has been randomly selected to participate in this project, together with many other households in this community. If you do agree to participate, I will ask you some questions about the last time any of your children fell sick and the actions you took as their parent or caregiver. I will also ask you some general questions about your household and your community.

Participation in this interview is voluntary. If you agree to take part, we will start the interview. The interview should only take about 30 minutes. All your answers to the questions will be used only for the purpose of this research and they will be kept private and confidential. If you agree to participate, you can also decide not to answer any of the questions that you do not want to, and you can stop the interview at any time.

Please ask if you have any questions. You may contact Mr. Isaac Mwase, the Principle Investigator, on 071-266-3404 if you have any additional questions or need further clarification later. You may also contact the Human Research Ethics Committee in Cape Town on telephone number 021-406-6338 or 021-406-6492 for any questions regarding your rights as a research subject.

Thank you very much for your time. Would you like to take part in this study?

RESPONSE CODE

YES........................................................................................................1

NO.........................................................................................................2

→If participant disagrees, discontinue interview
b) **Statement of consent**

*(If participant agrees to take part they are required to complete section below):*

The foregoing information has been read to me, and I have had the opportunity to ask questions about it. The questions that I have asked have been answered to my satisfaction. My signature indicates that I consent voluntarily to participate in this research.

Participant’s name: …………………………………………………………

Signature: ……………………………………………………………………

Date: …………………………………………………………………………

Place: …………………………………………………………………………

*Witness (if any):*

Witnesses’ name: ……………………………………………………………

Signature: ………………………………………………………………………

Date: …………………………………………………………………………

Place: …………………………………………………………………………

*Statement by the interviewer:*

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Interviewer’s name: …………………………………………………………

Signature: ………………………………………………………………………

Date: …………………………………………………………………………

Place: …………………………………………………………………………
APPENDIX II: Household Questionnaire

Social capital and household health-seeking behaviour study

QUESTIONNAIRE ID

<table>
<thead>
<tr>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-district</td>
</tr>
<tr>
<td>CEA number</td>
</tr>
<tr>
<td>Cluster Number</td>
</tr>
<tr>
<td>House number and street</td>
</tr>
</tbody>
</table>

NAME OF RESPONDENT ___________________________________________________________

INTERVIEW VISITS

<table>
<thead>
<tr>
<th>FIRST VISIT</th>
<th>SECOND VISIT</th>
<th>THIRD VISIT</th>
<th>FINAL VISIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME AND DATE</td>
<td>NAME OF INTERVIEWER:</td>
<td>VISIT RESULT*</td>
<td>DATE OF NEXT INTERVIEW:</td>
</tr>
</tbody>
</table>

*VISIT’S RESULT CODES:

1 COMPLETED 2 POSTPONED 3 REFUSED 97 OTHER

Good morning/Good afternoon! My name is ........ (Interviewer says their name). I am working on a research project as a Research Assistant. We are interested in learning about people’s opinions and experiences about social capital and what are the general available options and decisions that people make when their children aged 15 years or younger become ill in your community.

Your household has been randomly selected together with other households in this community. Participation in this study is voluntary and once started you may decide to stop at any time or refuse to answer some questions.

If you are interested in taking part in the study, I will ask you about your experiences on this and related questions. The interview will last for about 30 minutes. The answers you will give us will help us explore the different experiences and choices that people make when children become ill. The information we collect will not be disclosed to anyone.

May I proceed with the questions? Yes/No

YES……………………………..1

NO……………………………..2

(IF DECLINES, THEN THANK THE RESPONDENT AND POLITELY END THE INTERVIEW)

Do you have any children living in this house with the age of 15 years or younger who had fallen ill in the past?

YES……………………………..1

NO……………………………..2

(IF NOT, THEN HOUSEHOLD NOT ELIGIBLE. THANK THE RESPONDENT AND POLITELY END THE INTERVIEW)
### SECTION A: DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS

**Household characteristics and demographical data:**

To start, I will be asking you some questions about yourself, your living situation, and about people that you live with. Remember, you may stop at any time or refuse to answer any questions you do not wish to answer and still remain in the study.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Time</td>
<td>Record time at the beginning of the interview.</td>
</tr>
<tr>
<td>Q1. Sex of respondent</td>
<td>FEMALE .................................................................01</td>
</tr>
<tr>
<td></td>
<td>MALE .................................................................02</td>
</tr>
<tr>
<td>Q2. When were you born?</td>
<td>DAY .................................................................</td>
</tr>
<tr>
<td></td>
<td>MONTH ...............................................................</td>
</tr>
<tr>
<td></td>
<td>YEAR .................................................................</td>
</tr>
<tr>
<td></td>
<td>DOES NOT KNOW ..................................................98</td>
</tr>
<tr>
<td>Q3. What is your current marital status?</td>
<td>SINGLE ..............................................................01</td>
</tr>
<tr>
<td>(if respondent neither married nor in consensual union, you will have to skip Q.7)</td>
<td>MARRIED ..........................................................02</td>
</tr>
<tr>
<td></td>
<td>CONSENSUAL UNION ...............................................03</td>
</tr>
<tr>
<td></td>
<td>WIDOWED ..........................................................04</td>
</tr>
<tr>
<td></td>
<td>DIVORCED ..........................................................05</td>
</tr>
<tr>
<td></td>
<td>SEPARATED ..........................................................06</td>
</tr>
<tr>
<td>Q4. What is the highest level of school you attended?</td>
<td>NO FORMAL EDUCATION .............................................01</td>
</tr>
<tr>
<td></td>
<td>PRIMARY ..................................................................02</td>
</tr>
<tr>
<td></td>
<td>SECONDARY ..........................................................03</td>
</tr>
<tr>
<td></td>
<td>COLLEGE ................................................................04</td>
</tr>
<tr>
<td></td>
<td>UNIVERSITY ..........................................................05</td>
</tr>
<tr>
<td>Q5. What kind of work do you mainly do?</td>
<td>AGRICULTURE .........................................................01</td>
</tr>
<tr>
<td></td>
<td>COTTAGE INDUSTRY ................................................02</td>
</tr>
<tr>
<td></td>
<td>SERVICE ................................................................03</td>
</tr>
<tr>
<td></td>
<td>BUSINESS ................................................................04</td>
</tr>
<tr>
<td></td>
<td>DAILY WAGES (AGRI.) ...............................................05</td>
</tr>
<tr>
<td></td>
<td>DAILY WAGES (NON-AGRI.) .......................................06</td>
</tr>
<tr>
<td></td>
<td>CANNOT WORK (HEALTH REASON) ...............................07</td>
</tr>
<tr>
<td></td>
<td>STUDENT ................................................................08</td>
</tr>
<tr>
<td></td>
<td>UNEMPLOYED ........................................................09</td>
</tr>
<tr>
<td></td>
<td>OTHER (SPECIFY) ....................................................10</td>
</tr>
<tr>
<td></td>
<td>DON'T KNOW ........................................................77</td>
</tr>
<tr>
<td>Q6. What kind of work does your spouse mainly do?</td>
<td>AGRICULTURE .........................................................01</td>
</tr>
<tr>
<td>(This question only applies if answer to Q.3 is &quot;Married&quot; or &quot;Consensual union&quot;)</td>
<td>COTTAGE INDUSTRY ................................................02</td>
</tr>
<tr>
<td></td>
<td>SERVICE ................................................................03</td>
</tr>
<tr>
<td></td>
<td>BUSINESS ................................................................04</td>
</tr>
<tr>
<td></td>
<td>DAILY WAGES (AGRI.) ...............................................05</td>
</tr>
<tr>
<td></td>
<td>DAILY WAGES (NON-AGRI.) .......................................06</td>
</tr>
</tbody>
</table>
Q7. What is your religion?
(Probe if responds “Christianity”)
CATHOLIC.............................................................................01
PROTESTANT/PENTECOSTAL..............................................02
OTHER CHRISTIAN, SPECIFY ...........................................03
MOSLEM ..............................................................................04
TRADITIONAL.......................................................................05
OTHER (SPECIFY)...............................................................88

Q8. What population group do you belong?
(Interviewer to indicate population group)
BLACK AFRICAN.....................................................................01
COLOURED ...........................................................................02
INDIAN/ASIAN.................................................................03
WHITE ..................................................................................04
OTHER (SPECIFY)...............................................................88

Q9. What is the average household income per month?
(Total monthly income earned by all household members including disability grants, cash transfers, gifts, etc.)

Q10. What was the total household expenditure in the last month?
(Everything that the household and its members spent money on, including clothing, food, school fees, transport, rent and rates, alcohol and tobacco, entertainment and any other expenses)

Q11. How many rooms in your household are used for sleeping?
NUMBER OF ROOMS................................................................
DON'T KNOW...........................................................................

Q12. Does any member of your household own:
YES NO
BICYCLE ..............................................................................1 2
MOTORCYCLE ....................................................................1 2
CAR .......................................................................................1 2
TRACTOR/ HORSE/CART ......................................................1 2
OTHER, SPECIFY ...............................................................1 2

Q13. Does your household have:
YES NO
ELECTRICITY ........................................................................1 2
RADIO ......................................................................................1 2
TELEVISION ...........................................................................1 2
TELEPHONE ...........................................................................1 2
REFRIGERATOR ....................................................................12
OTHER, SPECIFY ...............................................................1 2

Q14. Now I would like to ask you about all the members of this household in terms of their name, age, relationship to the head of the
household, education level attained and employment status:

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Age (years)</th>
<th>Relationship to head of household</th>
<th>Highest level of education</th>
<th>Employment status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>1. M</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(ii)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(iii)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(iv)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(v)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(vi)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(vii)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(viii)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(ix)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(x)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
</tbody>
</table>

Codes:
1. Head of household
2. Spouse
3. Child
4. Parent
5. Grand child
6. Grand parent
7. Uncle/aunt
8. Other(specify)

SECTION B: MEMBERSHIPS IN ASSOCIATIONS AND NETWORKS

Now I would like to ask you some questions about how you feel about this neighbourhood, and how you take part in the community activities.

Q15. Are you or is someone in your household a member of any groups, organizations, or associations?

(Probe who in the household belongs to which group and the degree of participation. Are there any other groups or informal associations that you or someone in your household belongs to?)

If the household is not a member in any group, SKIP TO Q.18

<table>
<thead>
<tr>
<th>Family member’s name (Refer to the previous list of household members)</th>
<th>Organisation</th>
<th>Type of organisation</th>
<th>Degree of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>(ii)</td>
<td>___________</td>
<td>___________</td>
<td>___________</td>
</tr>
<tr>
<td>Q16.</td>
<td>Do you consider yourself/household member to be active in the group, such as by attending meetings or volunteering your time in other ways, or are you relatively inactive?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>.................................................................................................................................01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO</td>
<td>.................................................................................................................................02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q17.</th>
<th>Degree of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEADER</td>
<td>.........................................................................................................................01</td>
</tr>
<tr>
<td>VERY ACTIVE</td>
<td>.....................................................................................................................02</td>
</tr>
<tr>
<td>SOMEWHAT ACTIVE</td>
<td>...............................................................................................................03</td>
</tr>
<tr>
<td>NOT ACTIVE</td>
<td>......................................................................................................................04</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q18.</th>
<th>How does the group usually make decisions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE LEADER DECIDES AND INFORMS THE OTHER GROUP MEMBERS</td>
<td>.................................................................01</td>
</tr>
<tr>
<td>THE LEADER ASKS GROUP MEMBERS WHAT THEY THINK AND THEN DECIDES</td>
<td>.........................................................02</td>
</tr>
<tr>
<td>THE GROUP MEMBERS HOLD A DISCUSSION AND DECIDE TOGETHER</td>
<td>.................................................................03</td>
</tr>
<tr>
<td>OTHER (SPECIFY)</td>
<td>.................................................................88</td>
</tr>
</tbody>
</table>

Now I’m going to ask you some questions about the members of these groups.

<table>
<thead>
<tr>
<th>Q19.</th>
<th>Are group members mostly of the same extended family?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>......................................................................................................01</td>
</tr>
<tr>
<td>NO</td>
<td>......................................................................................................02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q20.</th>
<th>Are members mostly of the same religion?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>......................................................................................................01</td>
</tr>
<tr>
<td>NO</td>
<td>......................................................................................................02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q21.</th>
<th>Are members mostly of the same gender?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>......................................................................................................01</td>
</tr>
<tr>
<td>NO</td>
<td>......................................................................................................02</td>
</tr>
</tbody>
</table>
### Question 22
Are members mostly of the same political viewpoint or do they belong to the same political party?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

### Question 23
Are there any services where you or members of your household are occasionally denied service or have only limited opportunity to use?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

- EDUCATION/SCHOOLS
- HEALTH SERVICES/CLINICS
- HOUSING ASSISTANCE
- EMPLOYMENT
- CREDIT/FINANCE
- TRANSPORTATION
- WATER DISTRIBUTION
- SANITATION SERVICES
- JUSTICE/CONFLICT RESOLUTION
- SECURITY/POLICE SERVICES

### Question 24
Do you think that there are other households in this community that have such access problems?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

### Question 25
What are the reasons or criteria why some people are excluded from these services?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

- INCOME LEVEL
- OCCUPATION
- SOCIAL STATUS (CLASS)
- AGE
- GENDER
- RACE/ETHNICITY
- LANGUAGE
- RELIGIOUS BELIEFS
- POLITICAL AFFILIATION
- LACK OF EDUCATION

### Section C: Trust and Adherence to Norms

#### Question 26
Do you think that in this neighbourhood people generally trust one another?

<table>
<thead>
<tr>
<th>DO TRUST</th>
<th>DO NOT TRUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

#### Question 27
Do you think over the last few years this level of trust has gotten better, gotten worse, or stayed about the same?

<table>
<thead>
<tr>
<th>BETTER</th>
<th>THE SAME</th>
<th>WORSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
<td>03</td>
</tr>
</tbody>
</table>

#### Question 28
Do you agree or disagree that people here look out mainly for the welfare of their own families and they are not much concerned with neighbourhood welfare?

<table>
<thead>
<tr>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
<td>03</td>
<td>04</td>
</tr>
<tr>
<td>Q29.</td>
<td>Compared with other villages/neighborhoods, how much do people of this neighborhood trust each other?</td>
<td>LESS THAN OTHER NEIGHBOURHOODS 01</td>
<td>THE SAME AS OTHER NEIGHBOURHOODS 02</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Q30.</td>
<td>If you suddenly had to go away for a day or two, whom could you count on to take care of your children?</td>
<td>OTHER FAMILY MEMBER 1</td>
<td>NEIGHBOUR 2</td>
</tr>
<tr>
<td>Q31.</td>
<td>Do you agree or disagree that people here look out mainly for the welfare of their own families and they are not much concerned with neighbourhood welfare?</td>
<td>STRONGLY AGREE 1</td>
<td>AGREE 2</td>
</tr>
<tr>
<td>Q32.</td>
<td>If a community project does not directly benefit your neighbor but has benefits for others in the village/neighborhood, then do you think your neighbor would contribute time or money for this project?</td>
<td>TIME ONLY 1</td>
<td>MONEY ONLY 2</td>
</tr>
<tr>
<td>Q33.</td>
<td>Are you confident that the government of Cape Town is acting in everyone's best interest? You have a choice of &quot;nearly always,&quot; &quot;most of the time,&quot; &quot;sometimes&quot; or &quot;hardly ever.&quot;</td>
<td>NEARLY ALWAYS (INCLUDING ALWAYS) 1</td>
<td>MOST OF THE TIME 2</td>
</tr>
<tr>
<td>Q34.</td>
<td>In this village/neighborhood, one has to be alert or someone is likely to take advantage of you.</td>
<td>STRONGLY AGREE 1</td>
<td>AGREE 2</td>
</tr>
<tr>
<td>Q35.</td>
<td>If I have a problem, there is always someone to help me.</td>
<td>STRONGLY AGREE 1</td>
<td>AGREE 2</td>
</tr>
<tr>
<td>Q36.</td>
<td>I do not pay attention to the opinions of others in the neighborhood.</td>
<td>STRONGLY AGREE 1</td>
<td>AGREE 2</td>
</tr>
<tr>
<td>Q37.</td>
<td>In the past year, how often have members of this neighborhood gotten together and jointly petitioned government officials or political leaders with neighborhood development as their goal?</td>
<td>NEVER 1</td>
<td>ONCE 2</td>
</tr>
</tbody>
</table>
| Q38. Was this action/were any of these actions successful? | YES, ALL WERE SUCCESSFUL ........................................01  
SOME WERE SUCCESSFUL ........................................02  
NO, NONE WERE SUCCESSFUL ........................................03 |
|----------------------------------------------------------|---------------------------------------------------------------|
| Q39. In the last three years have you personally done any of the following things: | YES NO | VOTED IN THE ELECTIONS ........................................1 2  
ACTIVELY PARTICIPATED IN AN ASSOCIATION .......................1 2  
MADE A PERSONAL CONTACT WITH AN INFLUENTIAL PERSON ..........1 2  
MADE THE MEDIA INTERESTED IN A PROBLEM .........................1 2  
ACTIVELY PARTICIPATED IN AN INFORMATION CAMPAIGN ............1 2  
ACTIVELY PARTICIPATED IN AN ELECTION CAMPAIGN ...............1 2  
TAKEN PART IN A PROTEST MARCH OR DEMONSTRATION ..............1 2  
CONTACTED YOUR ELECTED REPRESENTATIVE ........................1 2  
TAKEN PART IN A SIT-IN OR DISRUPTION OF GOVERNMENT MEETINGS/ 
OFFICES .............................................................1 2  
TALKED WITH OTHER PEOPLE IN YOUR AREA ABOUT A PROBLEM ........1 2  
NOTIFIED THE COURT OR POLICE ABOUT A PROBLEM ................1 2  
MADE A MONETARY OR IN-KIND DONATION ..........................1 2  
VOLUNTEERED FOR A CHARITABLE ORGANIZATION ...............1 2 |
| Q40. If some decision related to a development project needed to be made in this neighbourhood, do you think the entire neighbourhood would be called upon to decide or would the community leaders make the decision themselves? | THE COMMUNITY LEADERS WOULD DECIDE .........................01  
THE WHOLE NEIGHBOURHOOD WOULD BE CALLED ..............02 |
| Q41. Overall, how would you rate the spirit of participation in this neighbourhood? | VERY LOW ...............................................................01  
LOW .................................................................02  
AVERAGE .............................................................03  
HIGH .................................................................04  
VERY HIGH ............................................................05 |
<table>
<thead>
<tr>
<th>Q42.</th>
<th>How much influence do you think people like yourself can have in making this neighbourhood a better place to live?</th>
<th>A LOT ......................................................... 01</th>
<th>SOME ...................................................... 02</th>
<th>NOT VERY MUCH ........................................... 03</th>
<th>None ...................................................... 4</th>
</tr>
</thead>
</table>

**SECTION E: CHILD HEALTH AND CARE SEEKING**

I will now ask you some questions about illness of any of your children in the recent past and the actions that you took upon discovering the child’s illness.

<table>
<thead>
<tr>
<th>Q43.</th>
<th>Now I would like to ask about any children you have had. I am interested in the children that are biologically yours as well as the children for whom you take social and financial responsibility even if they are not biologically yours, regardless of whether they are living with you, living somewhere else, or have died. Do you have biologically or socially adopted children?</th>
<th>YES ......................................................... 01</th>
<th>NO ......................................................... 02</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q44.</th>
<th>How many are your biological children according to the definition I provided in the previous question? How many of these are not your biological children?</th>
<th>BIOLOGICAL ................................................</th>
<th>SOCIALLY ADOPTED/NOT BIOLOGICAL ................................</th>
<th>TOTAL ...........................................</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q45.</th>
<th>How many children have your given birth to in your life so far?</th>
<th>TOTAL CHILDREN-EVER-BORN ................................</th>
<th>TOTAL CHILDREN DEAD ................................</th>
<th>TOTAL CHILDREN ALIVE ................................</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q46.</th>
<th>Do you remember the time when any of the children mentioned became ill?</th>
<th>YES ......................................................... 01</th>
<th>NO ......................................................... 02</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q47.</th>
<th>If yes, when did the child or children become ill?</th>
<th>LESS THAN 4 WEEKS AGO ................................</th>
<th>BETWEEN 4 WEEKS AND 1 YEAR AGO ................................</th>
<th>MORE THAN A YEAR AGO ................................</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q48.</th>
<th>If yes, what was the illness? (specify)</th>
<th>........................................................................</th>
<th>........................................................................</th>
<th>........................................................................</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q49.</th>
<th>If yes, did you seek advice or treatment for the illness?</th>
<th>YES ......................................................... 01</th>
<th>NO ......................................................... 02</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q50.</th>
<th>How soon upon discovering the illness did you take that action?</th>
<th>WITHIN 24 HOURS ................................</th>
<th>AFTER 24 HOURS ................................</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q51.</th>
<th>What motivated you to seek/not seek treatment?</th>
<th>........................................................................</th>
<th>........................................................................</th>
<th>........................................................................</th>
</tr>
</thead>
</table>

| Q52. | (If sought treatment) Where did you seek treatment? | PUBLIC FACILITY ................................ | PRIVATE FACILITY ................................ | CHEMIST/PHARMACY ................................ | SHOP ................................ | TRADITIONAL HEALER ................................ |
|------|--------------------------------------------------------------------------------------------------|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|

(If more than one choice selected, probe where they actually went FIRST)
<table>
<thead>
<tr>
<th>Q53.</th>
<th>What made you decide to go the mentioned care provider? (CIRCLE ALL THAT APPLY)</th>
<th>FAITH HEALER ................................................06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TIME ......................................................................................01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEALTH CONCERN .....................................................................02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADVISED BY FRIENDS/NEIGHBOUR ..............................................04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADVISED BY SPOUSE ...................................................................05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEARD ON RADIO/TV ..................................................................06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAW A POSTER ...........................................................................07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAW A PAMPHLET/BROCHURE ....................................................08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DO NOT KNOW .........................................................................77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHER ...................................................................................88</td>
<td></td>
</tr>
</tbody>
</table>

| Q54. | What is the approximate distance from your household to the care provider you went to? |  |
|------|---------------------------------------------------------------------------------|      |
|      | (Specify distance in Km): ........................................................................... |      |

| Q55. | What means of transport do you usually use to get to the health facility the household normally uses? |  |
|------|-------------------------------------------------------------------------------------------------|      |
|      | WALKING ..............................................................................................................................01 |      |
|      | MINIBUS TAXI/SEDAN TAXI/BAKKIE TAXI ..........................................................................................02 |      |
|      | BUS ..............................................................................................................................................03 |      |
|      | TRAIN ..........................................................................................................................................04 |      |
|      | CAR .............................................................................................................................................05 |      |
|      | BICYCLE/.MOTORCYCLE ................................................................................................................06 |      |
|      | OTHER (SPECIFY) ......................................................................................................................88 |      |

| Q56. | Using your usual mode of transport, approximately how much time does it take travelling from your household to the care provider that you mentioned? |  |
|------|-----------------------------------------------------------------------------------------------|      |
|      | HOURS .................................................................................................................................Hrs |      |
|      | MINUTES .................................................................................................................................Min |      |

| Q57. | How much did you spend on transport costs? |  |
|------|---------------------------------------------------------------------------------|      |
|      | (Specify amount in SA Rands): .................................................................................. |      |

| Q58. | How much did you spend on drugs? |  |
|------|---------------------------------------------------------------------------------|      |
|      | (Specify amount in SA Rands): ............................................................................. |      |

| Q59. | How much time did you spend on the queue |  |
|------|---------------------------------------------------------------------------------|      |
|      | (Specify time in minutes): .............................................................................. |      |

| Q60. | Is this facility the nearest of its kind (clinic/ hospital/ health centre etc.) to your dwelling? |  |
|------|-------------------------------------------------------------------------------------------------|      |
|      | YES ........................................................................................................................................01 |      |
|      | NO .................................................................................................................................02 |      |

| Q61. | If not the nearest, why is the household normally not using the nearest facility? |  |
|------|---------------------------------------------------------------------------------|      |
|      | FACILITIES NOT CLEAN ...............................................................................................01 |      |
|      | LONG WAITING TIME .......................................................................................................02 |      |
|      | OPENING TIMES NOT CONVENIENT ..................................................................................03 |      |
|      | TOO EXPENSIVE ..............................................................................................................04 |      |
|      | DRUGS THAT WERE NEEDED, NOT AVAILABLE .................................................................04 |      |
|      | STAFF RUDE OR UNCARING OR TURNED PATIENT AWAY ....................................................05 |      |
|      | INCORRECT DIAGNOSIS .....................................................................................................06 |      |
|      | NOT ON MEDICAL AID SCHEME LIST OF FACILITIES ......................................................07 |      |
|      | PREFER TO USE A STATE/PROVINCIAL HEALTH INSTITUTION ..........................................08 |      |

X
Q62. In general were you satisfied with the quality of health services you received for your child by the provider?

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERY SATISFIED</td>
<td>01</td>
</tr>
<tr>
<td>SATISFIED</td>
<td>02</td>
</tr>
<tr>
<td>UNSATISFIED</td>
<td>03</td>
</tr>
<tr>
<td>VERY UNSATISFIED</td>
<td>04</td>
</tr>
<tr>
<td>DO NOT KNOW</td>
<td>77</td>
</tr>
</tbody>
</table>

We have come to the end of the interview.

Thank you so much for your participation.

Comments:

............................................................
............................................................
............................................................
APPENDIX IV: Ethical Approval Letter

UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences
Faculty of Health Sciences Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6338  Facsimile [021] 406 6411
e-mail: sumayah.ariefdien@uct.ac.za

11 October 2012

HREC REF: 381/2012

Mr I Mwase
C/o Dr O Alaba
Health Economics Unit
School of Public Health & Family Medicine
FHS

Dear Mr Mwase

PROJECT TITLE: SOCIAL CAPITAL AND HOUSEHOLD HEALTH-SEEKING BEHAVIOUR FOR CHILDREN IN THE CONTEXT OF URBAN SETTINGS: THE CASE OF KHAYELITSHA AND MITCHELL'S PLAIN IN WESTERN CAPE, SOUTH AFRICA.

Thank you for addressing the issues raised by the committee.

It is a pleasure to inform you that the Ethics Committee has formally approved the above-mentioned study.

Approval is granted for one year till the 15 October 2013.

Please submit a progress form, using the standardised Annual Report Form, if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC. REF in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS

Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938
This serves to confirm that the University of Cape Town Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.

The Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.
APPENDIX V: Journal Instructions for Authors

BMC Health Services Research Instructions for Authors

Research articles

Criteria | Submission process | Preparing main manuscript text | Preparing illustrations and figures | Preparing tables | Preparing additional files | Style and language

Assistance with the process of manuscript preparation and submission is available from BioMed Central customer support team. See 'About this journal' for information about policies and the refereeing process. We also provide a collection of links to useful tools and resources for scientific authors on our page.

Criteria

Research articles should report on original primary research, but may report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our Editorial Policies. Please note that non-commissioned pooled analyses of selected published research will not be considered.

Submission process

Manuscripts must be submitted by one of the authors of the manuscript, and should not be submitted by anyone on their behalf. The submitting author takes responsibility for the article during submission and peer review.

Please note that BMC Health Services Research levies an article-processing charge on all accepted Research articles; if the submitting author’s institution is a BioMed Central member the cost of the article-processing charge may be covered by the membership (see About page for detail). Please note that the membership is only automatically recognised on submission if the submitting author is based at the member institution.

To facilitate rapid publication and to minimize administrative costs, BMC Health Services Research prefers online submission.

Files can be submitted as a batch, or one by one. The submission process can be interrupted at any time; when users return to the site, they can carry on where they left off.

See below for examples of word processor and graphics file formats that can be accepted for the main manuscript document by the online submission system. Additional files of any type, such as movies, animations, or original data files, can also be submitted as part of the manuscript.

During submission you will be asked to provide a cover letter. Use this to explain why your manuscript should be published in the journal, to elaborate on any issues relating to our editorial policies in the ‘About BMC Health Services Research’ page, and to declare any potential competing interests. You will be also asked to provide the contact details (including email addresses) of potential peer reviewers for your manuscript. These should be experts in their field, who will be able to provide an objective assessment of the manuscript. Any suggested peer reviewers should not have published with any of the authors of the manuscript within the past five years, should not be
current collaborators, and should not be members of the same research institution. Suggested reviewers will be considered alongside potential reviewers recommended by the Editorial team, Editorial Advisors, Section Editors and Associate Editors.

Assistance with the process of manuscript preparation and submission is available from BioMed Central customer support team.

We also provide a collection of links to useful tools and resources for scientific authors on our Useful Tools page.

**File formats**

The following word processor file formats are acceptable for the main manuscript document:

- Microsoft word (DOC, DOCX)
- Rich text format (RTF)
- Portable document format (PDF)
- TeX/LaTeX (use BioMed Central’s TeX template)
- DeVice Independent format (DVI)

TeX/LaTeX users: Please use BioMed Central’s TeX template and BibTeX style file if you use TeX format. During the TeX submission process, please submit your TeX file as the main manuscript file and your bib/bbl file as a dependent file. Please also convert your TeX file into a PDF and submit this PDF as an additional file with the name ‘Reference PDF’. This PDF will be used by internal staff as a reference point to check the layout of the article as the author intended. Please also note that all figures must be coded at the end of the TeX file and not inline.

If you have used another template for your manuscript, or if you do not wish to use BibTeX, then please submit your manuscript as a DVI file. We do not recommend converting to RTF.

For all TeX submissions, all relevant editable source must be submitted during the submission process. Failing to submit these source files will cause unnecessary delays in the publication procedures.

**Publishing Datasets**

Through a special arrangement with LabArchives, LLC, authors submitting manuscripts to BMC Health Services Research can obtain a complimentary subscription to LabArchives with an allotment of 100MB of storage. LabArchives is an Electronic Laboratory Notebook which will enable scientists to share and publish data files in situ; you can then link your paper to these data. Data files linked to published articles are assigned digital object identifiers (DOIs) and will remain available in perpetuity. Use of LabArchives or similar data publishing services does not replace pre-existing data deposition requirements, such as for nucleic acid sequences, protein sequences and atomic coordinates.

Instructions on assigning DOIs to datasets, so they can be permanently linked to publications, can be found on the LabArchives website. Use of LabArchives’ software has no influence on the editorial decision to accept or reject a manuscript.

Authors linking datasets to their publications should include an Availability of supporting data section in their manuscript and cite the dataset in their reference list.
Preparing main manuscript text

General guidelines of the journal's style and language are given below.

Overview of manuscript sections for Research articles

Manuscripts for Research articles submitted to *BMC Health Services Research* should be divided into the following sections (in this order):

- Title page
- Abstract
- Keywords
- Background
- Methods
- Results and discussion
- Conclusions
- List of abbreviations used (if any)
- Competing interests
- Authors' contributions
- Authors' information
- Acknowledgements
- Endnotes
- References
- Illustrations and figures (if any)
- Tables and captions
- Preparing additional files

The **Accession Numbers** of any nucleic acid sequences, protein sequences or atomic coordinates cited in the manuscript should be provided, in square brackets and include the corresponding database name; for example, [EMBL:AB026295, EMBL:AC137000, DDBJ:AE000812, GenBank:U49845, PDB:1BFM, Swiss-Prot:Q96KQ7, PIR:S66116].

The databases for which we can provide direct links are: EMBL Nucleotide Sequence Database (*EMBL*), DNA Data Bank of Japan (*DDBJ*), GenBank at the NCBI (*GenBank*), Protein Data Bank (*PDB*), Protein Information Resource (*PIR*) and the Swiss-Prot Protein Database (*Swiss-Prot*).

You can [download a template](#) (Mac and Windows compatible; Microsoft Word 98/2000) for your article.

For reporting standards please see the information in the About section.

**Title page**

The title page should:

- provide the title of the article
- list the full names, institutional addresses and email addresses for all authors
- indicate the corresponding author

Please note:
• the title should include the study design, for example "A versus B in the treatment of C: a randomized controlled trial X is a risk factor for Y: a case control study"
• abbreviations within the title should be avoided

Abstract

The Abstract of the manuscript should not exceed 350 words and must be structured into separate sections: **Background**, the context and purpose of the study; **Methods**, how the study was performed and statistical tests used; **Results**, the main findings; **Conclusions**, brief summary and potential implications. Please minimize the use of abbreviations and do not cite references in the abstract. **Trial registration**, if your research article reports the results of a controlled health care intervention, please list your trial registry, along with the unique identifying number (e.g. **Trial registration**: Current Controlled Trials ISRCTN73824458). Please note that there should be no space between the letters and numbers of your trial registration number. We recommend manuscripts that report randomized controlled trials follow the [CONSORT extension for abstracts](#).

Keywords

Three to ten keywords representing the main content of the article.

Background

The Background section should be written in a way that is accessible to researchers without specialist knowledge in that area and must clearly state - and, if helpful, illustrate - the background to the research and its aims. Reports of clinical research should, where appropriate, include a summary of a search of the literature to indicate why this study was necessary and what it aimed to contribute to the field. The section should end with a brief statement of what is being reported in the article.

Methods

The methods section should include the design of the study, the setting, the type of participants or materials involved, a clear description of all interventions and comparisons, and the type of analysis used, including a power calculation if appropriate. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses in the Methods section.

For studies involving human participants a statement detailing ethical approval and consent should be included in the methods section. For further details of the journal's editorial policies and ethical guidelines see [About this journal](#).

For further details of the journal's data-release policy, see the policy section in [About this journal](#).

Results and discussion

The Results and discussion may be combined into a single section or presented separately. Results of statistical analysis should include, where appropriate, relative and absolute risks or risk reductions, and confidence intervals. The Results and discussion sections may also be broken into subsections with short, informative headings.
Conclusions

This should state clearly the main conclusions of the research and give a clear explanation of their importance and relevance. Summary illustrations may be included.

List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations can be provided, which should precede the competing interests and authors' contributions.

Competing interests

A competing interest exists when your interpretation of data or presentation of information may be influenced by your personal or financial relationship with other people or organizations. Authors must disclose any financial competing interests; they should also reveal any non-financial competing interests that may cause them embarrassment were they to become public after the publication of the manuscript.

Authors are required to complete a declaration of competing interests. All competing interests that are declared will be listed at the end of published articles. Where an author gives no competing interests, the listing will read 'The author(s) declare that they have no competing interests'.

When completing your declaration, please consider the following questions:

Financial competing interests

- In the past five years have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? Is such an organization financing this manuscript (including the article-processing charge)? If so, please specify.
- Do you hold any stocks or shares in an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? If so, please specify.
- Do you hold or are you currently applying for any patents relating to the content of the manuscript? Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript? If so, please specify.
- Do you have any other financial competing interests? If so, please specify.

Non-financial competing interests

Are there any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript? If so, please specify.

If you are unsure as to whether you, or one your co-authors, has a competing interest please discuss it with the editorial office.
Authors' contributions

In order to give appropriate credit to each author of a paper, the individual contributions of authors to the manuscript should be specified in this section.

According to ICMJE guidelines, an 'author' is generally considered to be someone who has made substantive intellectual contributions to a published study. To qualify as an author one should 1) have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) have been involved in drafting the manuscript or revising it critically for important intellectual content; 3) have given final approval of the version to be published; and 4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.

We suggest the following kind of format (please use initials to refer to each author's contribution): AB carried out the molecular genetic studies, participated in the sequence alignment and drafted the manuscript. JY carried out the immunoassays. MT participated in the sequence alignment. ES participated in the design of the study and performed the statistical analysis. FG conceived of the study, and participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

All contributors who do not meet the criteria for authorship should be listed in an acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support.

Authors' information

You may choose to use this section to include any relevant information about the author(s) that may aid the reader's interpretation of the article, and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

Acknowledgements

Please acknowledge anyone who contributed towards the article by making substantial contributions to conception, design, acquisition of data, or analysis and interpretation of data, or who was involved in drafting the manuscript or revising it critically for important intellectual content, but who does not meet the criteria for authorship. Please also include the source(s) of funding for each author, and for the manuscript preparation. Authors must describe the role of the funding body, if any, in design, in the collection, analysis, and interpretation of data; in the writing of the manuscript; and in the decision to submit the manuscript for publication. Please also acknowledge anyone who contributed materials essential for the study. If a language editor has made significant revision of the manuscript, we recommend that you acknowledge the editor by name, where possible.
The role of a scientific (medical) writer must be included in the acknowledgements section, including their source(s) of funding. We suggest wording such as 'We thank Jane Doe who provided medical writing services on behalf of XYZ Pharmaceuticals Ltd.'

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section.

Endnotes

Endnotes should be designated within the text using a superscript lowercase letter and all notes (along with their corresponding letter) should be included in the Endnotes section. Please format this section in a paragraph rather than a list.

References

All references, including URLs, must be numbered consecutively, in square brackets, in the order in which they are cited in the text, followed by any in tables or legends. Each reference must have an individual reference number. Please avoid excessive referencing. If automatic numbering systems are used, the reference numbers must be finalized and the bibliography must be fully formatted before submission.

Only articles, datasets, clinical trial registration records and abstracts that have been published or are in press, or are available through public e-print/preprint servers, may be cited; unpublished abstracts, unpublished data and personal communications should not be included in the reference list, but may be included in the text and referred to as "unpublished observations" or "personal communications" giving the names of the involved researchers. Obtaining permission to quote personal communications and unpublished data from the cited colleagues is the responsibility of the author. Footnotes are not allowed, but endnotes are permitted. Journal abbreviations follow Index Medicus/MEDLINE. Citations in the reference list should include all named authors, up to the first 30 before adding 'et al.'..

Any in press articles cited within the references and necessary for the reviewers' assessment of the manuscript should be made available if requested by the editorial office.

Style files are available for use with popular bibliographic management software:

- BibTeX
- EndNote style file
- Reference Manager
- Zotero

Examples of the BMC Health Services Research reference style are shown below. Please ensure that the reference style is followed precisely; if the references are not in the correct style they may have to be retyped and carefully proofread.

All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, in the following format: The Mouse Tumor Biology Database [http://tumor.informatics.jax.org/mtbwi/index.do]. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference.
Examples of the BMC Health Services Research reference style

Article within a journal


Article within a journal supplement


In press article


Published abstract


Article within conference proceedings


Book chapter, or article within a book


Whole issue of journal


Whole conference proceedings


Complete book


Monograph or book in a series

Book with institutional author


PhD thesis


Link / URL

The Mouse Tumor Biology Database [http://tumor.informatics.jax.org/mtbwi/index.do]

Link / URL with author(s)


Dataset with persistent identifier

Zheng, L-Y; Guo, X-S; He, B; Sun, L-J; Peng, Y; Dong, S-S; Liu, T-F; Jiang, S; Ramachandran, S; Liu, C-M; Jing, H-C (2011): *Genome data from sweet and grain sorghum (Sorghum bicolor)*. *GigaScience*. http://dx.doi.org/10.5524/100012.

Clinical trial registration record with persistent identifier


Preparing illustrations and figures

Illustrations should be provided as separate files, not embedded in the text file. Each figure should include a single illustration and should fit on a single page in portrait format. If a figure consists of separate parts, it is important that a single composite illustration file be submitted which contains all parts of the figure. There is no charge for the use of color figures.

Please read our [figure preparation guidelines](#) for detailed instructions on maximising the quality of your figures.

Formats

The following file formats can be accepted:

- PDF (preferred format for diagrams)
- DOCX/DOC (single page only)
- PPTX/PPT (single slide only)
- EPS
- PNG (preferred format for photos or images)
- TIFF
Figure legends

The legends should be included in the main manuscript text file at the end of the document, rather than being a part of the figure file. For each figure, the following information should be provided: Figure number (in sequence, using Arabic numerals - i.e. Figure 1, 2, 3 etc); short title of figure (maximum 15 words); detailed legend, up to 300 words.

Please note that it is the responsibility of the author(s) to obtain permission from the copyright holder to reproduce figures or tables that have previously been published elsewhere.

Preparing tables

Each table should be numbered and cited in sequence using Arabic numerals (i.e. Table 1, 2, 3 etc.). Tables should also have a title (above the table) that summarizes the whole table; it should be no longer than 15 words. Detailed legends may then follow, but they should be concise. Tables should always be cited in text in consecutive numerical order.

Smaller tables considered to be integral to the manuscript can be pasted into the end of the document text file, in A4 portrait or landscape format. These will be typeset and displayed in the final published form of the article. Such tables should be formatted using the 'Table object' in a word processing program to ensure that columns of data are kept aligned when the file is sent electronically for review; this will not always be the case if columns are generated by simply using tabs to separate text. Columns and rows of data should be made visibly distinct by ensuring that the borders of each cell display as black lines. Commas should not be used to indicate numerical values. Colour and shading may not be used; parts of the table can be highlighted using symbols or bold text, the meaning of which should be explained in a table legend. Tables should not be embedded as figures or spreadsheet files.

Larger datasets or tables too wide for a portrait page can be uploaded separately as additional files. Additional files will not be displayed in the final, laid-out PDF of the article, but a link will be provided to the files as supplied by the author.

Tabular data provided as additional files can be uploaded as an Excel spreadsheet (.xls) or comma separated values (.csv). As with all files, please use the standard file extensions.

Preparing additional files

Although BMC Health Services Research does not restrict the length and quantity of data included in an article, we encourage authors to provide datasets, tables, movies, or other information as additional files.

Please note: All Additional files will be published along with the article. Do not include files such as patient consent forms, certificates of language editing, or revised versions of the main manuscript document with tracked changes. Such files should be sent by email to editorial@biomedcentral.com quoting the Manuscript ID number.

Results that would otherwise be indicated as "data not shown" can and should be included as additional files. Since many weblinks and URLs rapidly become broken, BMC Health Services
Research requires that supporting data are included as additional files, or deposited in a recognized repository. Please do not link to data on a personal/departmental website. The maximum file size for additional files is 20 MB each, and files will be virus-scanned on submission.

Additional files can be in any format, and will be downloadable from the final published article as supplied by the author. We recommend CSV rather than PDF for tabular data.

Certain supported files formats are recognized and can be displayed to the user in the browser. These include most movie formats (for users with the Quicktime plugin), mini-websites prepared according to our guidelines, chemical structure files (MOL, PDB), geographic data files (KML).

If additional material is provided, please list the following information in a separate section of the manuscript text:

- File name (e.g. Additional file 1)
- File format including the correct file extension for example .pdf, .xls, .txt, .pptx (including name and a URL of an appropriate viewer if format is unusual)
- Title of data
- Description of data

Additional files should be named "Additional file 1" and so on and should be referenced explicitly by file name within the body of the article, e.g. 'An additional movie file shows this in more detail [see Additional file 1].'

**Additional file formats**

Ideally, file formats for additional files should not be platform-specific, and should be viewable using free or widely available tools. The following are examples of suitable formats.

- Additional documentation
  - PDF (Adobe Acrobat)
- Animations
  - SWF (Shockwave Flash)
- Movies
  - MP4 (MPEG 4)
  - MOV (Quicktime)
- Tabular data
  - XLS, XLSX (Excel Spreadsheet)
  - CSV (Comma separated values)

As with figure files, files should be given the standard file extensions.

**Mini-websites**

Small self-contained websites can be submitted as additional files, in such a way that they will be browsable from within the full text HTML version of the article. In order to do this, please follow these instructions:

1. Create a folder containing a starting file called index.html (or index.htm) in the root.
2. Put all files necessary for viewing the mini-website within the folder, or sub-folders.
3. Ensure that all links are relative (i.e. "images/picture.jpg" rather than "/images/picture.jpg" or "http://yourdomain.net/images/picture.jpg" or "C:\Documents and Settings\username\My Documents\mini-website\images\picture.jpg") and no link is longer than 255 characters.

4. Access the index.html file and browse around the mini-website, to ensure that the most commonly used browsers (Internet Explorer and Firefox) are able to view all parts of the mini-website without problems, it is ideal to check this on a different machine.

5. Compress the folder into a ZIP, check the file size is under 20 MB, ensure that index.html is in the root of the ZIP, and that the file has .zip extension, then submit as an additional file with your article.

**Style and language**

**General**

Currently, *BMC Health Services Research* can only accept manuscripts written in English. Spelling should be US English or British English, but not a mixture.

There is no explicit limit on the length of articles submitted, but authors are encouraged to be concise.

*BMC Health Services Research* will not edit submitted manuscripts for style or language; reviewers may advise rejection of a manuscript if it is compromised by grammatical errors. Authors are advised to write clearly and simply, and to have their article checked by colleagues before submission. In-house copyediting will be minimal. Non-native speakers of English may choose to make use of a copyediting service.

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For authors who wish to have the language in their manuscript edited by a native-English speaker with scientific expertise, BioMed Central recommends Edanz. BioMed Central has arranged a 10% discount to the fee charged to BioMed Central authors by Edanz. Use of an editing service is neither a requirement nor a guarantee of acceptance for publication. Please contact Edanz directly to make arrangements for editing, and for pricing and payment details.

**Help and advice on scientific writing**

The abstract is one of the most important parts of a manuscript. For guidance, please visit our page on [Writing titles and abstracts for scientific articles](#).

Tim Albert has produced for BioMed Central a list of tips for writing a scientific manuscript. [American Scientist](#) also provides a list of resources for science writing. For more detailed guidance on preparing a manuscript and writing in English, please visit the [BioMed Central author academy](#).

**Abbreviations**

Abbreviations should be used as sparingly as possible. They should be defined when first used and a list of abbreviations can be provided following the main manuscript text.
Typography

- Please use double line spacing.
- Type the text unjustified, without hyphenating words at line breaks.
- Use hard returns only to end headings and paragraphs, not to rearrange lines.
- Capitalize only the first word, and proper nouns, in the title.
- All pages should be numbered.
- Use the BMC Health Services Research reference format.
- Footnotes are not allowed, but endnotes are permitted.
- Please do not format the text in multiple columns.
- Greek and other special characters may be included. If you are unable to reproduce a particular special character, please type out the name of the symbol in full. Please ensure that all special characters used are embedded in the text, otherwise they will be lost during conversion to PDF.

Units

SI units should be used throughout (liter and molar are permitted, however).
APPENDIX VI: Author’s Contribution

This study’s concept, methods, data collection and analysis, including preparation of the journal manuscript were conceived, planned and carried out by Isaac Mwase, who is also the author.
APPENDIX VII: Competing Interests

The author declares that they are no competing interests.
APPENDIX VIII: Author's Information

Isaac Mwase is a Master’s student in Public Health, specializing in Health Economics at the University of Cape Town.
Acknowledgements

First and foremost, I wish to thank the Swedish International Development Agency (SIDA) for funding this study, and all the caregivers from Khayelitsha who participated in the survey. Special thanks also go to Dr. Olufunke Alaba, my academic supervisor; Dr. John Ataguba, the Head of Health Economics Unit; Dr. Ayako Honda, the former Head of Health Economics Unit; and Prof. Landon Myer for the guidance and support during the study. I also wish to thank Adri Winkler and Jackie Cogill from the UCT Postgraduate Academic Office for tirelessly providing administrative support that ensured smooth finalization of the study.
PART E: POLICY BRIEF
Background

Children world over are among the most vulnerable groups in society in so far as disease burden and mortality are concerned. In Sub-Saharan Africa alone, on average, almost 18,000 children died every day in 2012. In South Africa, under-five mortality rate in 2012 was 45 deaths per 1,000 live births – a position still far from the MDG target of 20.

Prompt seeking of healthcare by parents and caregivers as custodians of children’s health and wellbeing can play a significant role in preventing such deaths. In reducing morbidity and preventing child deaths it does matter not only whether a caregiver seeks healthcare at all, but also how soon the care is sought and the choice of healthcare provider.

Study Objectives

In this study we sought to investigate factors associated with healthcare-seeking behavior of parents and caregivers in Khayelitsha Township when their children become sick, and whether living in different neighbourhoods matters. Specifically, we focused on whether they sought healthcare the most recent time a child was sick in their household; and if they did, how soon and where the healthcare was sought.

Methods

We sampled 309 caregivers in households sampled from different neighbourhoods in Khayelitsha Township. In each household an adult caregiver was asked a set of questions on socio-demographics (sex, age, place of residence, education, occupation and marital status); social capital (participation in voting, collective action, previous experience of exclusion, and individual’s perceptions of

“WHERE YOU LIVE MAKES A DIFFERENCE TO YOUR HEALTH OVER AND ABOVE WHO YOU ARE.”

-Jones & Moon, 1993; Robberts, 1999; Berkman and Kawachi, 2000; McIntyre, 2000; cited in Subramanian et al. 2003: 65)

Findings from this study have shown that interpersonal trust and participation in civic activities such as voting play significant roles in promoting improved healthcare-seeking practices.

Most importantly, we also discovered that type of neighbourhood or place of residence equally matters. The study showed that place of residence alone contributed almost one-fifth (19.4%) of the total variations in the caregiver’s propensity to seek healthcare when a child is sick.

Therefore, in order to effectively respond to health needs of neighbourhoods, our study underscores the need for planners to break down strategies of health policy so that interventions address social determinants. Planners should be able to contextualize the social factors in neighbourhoods when implementing health policy and relate these to foster civic empowerment and strengthen local decision-making community bonds, trust, collective action and participation in local projects.
level of trust); and healthcare seeking practices the last time their children were sick. To be eligible for the study, sampled households had to have had a sick child in the 12 months prior to the interview.

Results

Socio-demographics
Twenty-four neighbourhoods in Khayelitsha Township were included in the survey, and a total of 309 caregivers participated in this study. Of these, 263 (85%) were women and 46 (15%) were men. The median age of the surveyed caregivers was 33 years with inter-quartile range (IQR) of 27.8 – 42.8 years. Nearly half of the respondents 162 (52%) were married or in consensual union, and over a third 121 (39%) were single. Twenty-five (8%) of the surveyed respondents were widowed, separated or divorced. Majority of the surveyed caregivers 186 (60.2%) had attained up to secondary school level of education. We also asked the caregivers about the first point of care where they sought treatment after realising their child’s illness. Majority of respondents 189 (80.1%) said they sought care from a public health facility; 14 (5.9%) sought care from a private health facility and 22 (9.3%) sought care from a chemist/pharmacy and 4 (1.7%) from the market. Only 3 (1.3%) sought care from traditional healers, and 1 (0.4%) from faith healers. The remaining 3 (1.3%) could not remember where they sought care for the sick child.

Healthcare seeking patterns

Our study showed that more than three-quarters (76.4%) of parents were able to seek some form of professional healthcare within 24 hours of discovering that a child in their household was ill. However, the proportion of caregivers that ignored the child’s illness, delayed seeking healthcare or never took any action at all (23.6%) was still relatively large considering the potential implication on mortality.

Promptness of healthcare seeking

Of the caregivers that sought healthcare, majority did so within 24 hours of discovering their child’s illness.

Healthcare provider choices

We also asked the caregivers about the first healthcare provider they went to after realizing their child’s illness, emphasizing on their first point of healthcare they actually went to. As shown in Figure 2, majority (80.1%) of respondents sought healthcare from a public health facility; 5.9% from a private health facility, 9.3% sought healthcare from a chemist/pharmacy and 1.7% from the market. Only 1.3% sought healthcare from traditional healers. A few caregivers (0.4%) went to faith healers while others (1.3%) could not remember where they sought healthcare.
Socio-demographic factors

Findings of this study showed no significant relationship between the respondent’s gender and seeking care for sick children (p>0.05). Similarly, we found no significant association between caregiver’s age and seeking treatment (p>0.10). However, we discovered a strong association between health seeking and respondents’ marital status (p<0.01). Likewise, caregiver’s level of education and their occupation were both highly associated with health seeking for ill children (p<0.001). Caregivers that have only attained only up to Primary level of education are less likely to take their children to for treatment compared to those that are secondary of higher educational attainment. Nevertheless, the employment status of the caregiver’s spouse seemed not to matter much: there was no significant association between the employment status of the spouse and the caregivers’ health seeking behaviour. In addition, neither religion nor race were significantly associated with caregivers seeking care the last time a child was ill (p>0.05).

Social Capital Predictors

Respondents indicated that trust. There was a positive association between social capital predictors (namely level of trust, experience of exclusion, participating in collective action and membership in associations) and healthcare-seeking, although our analysis did not establish statistically significant association between them. However, there was a strong link between health seeking and previous experience of exclusion. Caregivers who had been denied or excluded from healthcare services were more likely not to seek healthcare for their sick children. This possibly is explained by the stigma associated with the previous experience.

Is place of residence an important predictor of healthcare seeking?

To analyse the effects of neighbourhoods on health-seeking behavior, we conducted mixed-effects multilevel analysis. Our findings confirmed that the place of residence indeed counts. Over and above individual factors, place of residence alone accounted for a fifth (that is, 19.4%) of the overall variations in health seeking behavior of caregivers when their children are sick. Place of residence has been shown to be an important predictor of healthcare seeking behaviour.

Implication for Policy

This study underscores the need to go beyond medical factors and incorporate social determinants when interpreting health policy and designing health strategies and targeted interventions for different neighbourhoods and populations. The study shows that level of trust, participation in civic activities such as voting, collective action such as petitioning have a positive bearing on health outcomes. Further, this study highlights that each neighbourhood provides unique unobserved effects on individual level health outcomes. This confirms that indeed, where one lives makes a difference over And above individual characteristics. Therefore, there is need to contextualize health policies and strategies to lower level units, and at least make them relevant and responsive to neighbourhood levels.

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