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Original Article

Domestic Solid Waste and Health related Challenges among men and women: a case of Kiandutu informal settlement, Kiambu County, Kenya

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Domestic Solid Waste, Gender, Management, Health, Challenges, Socialization.

Health is a life component that cannot be ignored. In developing economies, the migration of people, both men and women, from rural areas into urban areas results from multiple factors. The social dynamics that include a search for a better life take the lead. This dire and never-ending relocation has led to an ever-increasing mushrooming of informal settlements in the urban areas. Among the devastating consequences is the increase in domestic solid waste and its poor management. This poor domestic solid waste management health challenges is coupled with gendered socialization and perceptions, some knowledge and practices. Social Context Theory was used to guide this study. The theory assumes that there exists flexibility of gender within a defined context. The study employed exploratory research design whose choice allowed an in-depth view of the generation of both qualitative and quantitative data. Random sampling of the villages and purposive sampling of the respondents were used to identify the study sample. A total number of 264 households was used as the sample size. This was a representation of 10% of all the households in the randomly sampled villages with each village being allocated a number of the respondents in regard to gender. The unit of analysis was the household, with the household heads, male and female being the respondents. Key informants were also considered in the study. They included the village elders, community health workers and the local administration. Tools that were considered for the generation of data included observation checklists, guided questionnaires and interview guides. Qualitative data was thematically coded and analysed using SPSS V24. The study concluded that early gendered socialisation has the capacity to contribute to poor methods household solid waste for both men and women, hence contributing to health challenges. The study also observed that inadequate knowledge among men and women in the management of solid waste was linked to inequitable health challenges experienced by both genders in informal settlements. The social realities plug into the dominant arrangements of gendered social behaviour that have great capacity to affect individuals' health. The findings suggest that gender-sensitive policies can be used to promote community awareness creation and education to modify the behaviour of men and women in protecting their own lives in terms of health.

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INTRODUCTION

According to United Nations (2014), at 40%, Africa was the least urbanized continent in the world by the first decade of the 21st Century. However, it is estimated that by the year 2050, more than half of Africa's population, 56% will be living in urban areas with a greater majority of these living within the informal settlements. This being the case, the rapidly growing population in the urban areas are set to be the epicentres for both social and economic development as well as the associated domestic waste generation. Urbanization and the generation of household solid waste can therefore be said to thrive in a relationship. This is to mean that the poorer the knowledge in the management of household solid waste, the more direct effects on health of humans who are the generators of that waste. This explains why solid waste management in general is a key agenda in regard to public health issues (Ziraba, Haregu, & Mberu, 2016). Further, the eventual health effects of solid waste rests on how it is managed. Poor solid waste management advocates for more health risks while the correct management of solid waste decreases the risk of diseases.

Imoukhuede, (2016) describes domestic solid waste as any unwanted solid materials generated from a household as a result of human activities. This domestic solid waste has capacity to cause

environmental, social, and health hazards. Domestic solid waste can be categorized into hazardous and non-hazardous household waste. The non-hazardous domestic solid waste will commonly include the food leftovers, paper and organic material from the home compound. but excludes items such as electronics, household chemicals, fertilizers, pesticides and medical related waste such as used wound bandages (Rosemary, 2022). Further, according to United States Conservation and Recovery Act, (1976), some of the most overlooked household hazardous solid wastes include the improperly disposed of old batteries, pesticides, fertilizers, paint, medicine bottles, nail and shoes polish, hair treatment chemicals and car oil. Some of these hazardous wastes can be reactive, ignitable, and corrosive.

Among actors in the stream of managing of domestic solid waste, more often than not, it is given a 'neutral concept' view. However, it should be recognised that in every society, domestic solid waste is viewed from a cultural context whereby, within households, men, women, and children have different opinions, observations, perceptions, and explanations of domestic solid waste (Poswa, 2009). In African, gendered socialisation patterns take a toll on the way women and men associate with and manage domestic solid waste. According to Muhammad and Manu (2013), the gender roles assigned by the

society, often times, make the handling and the management of waste a women and girls' affair as opposed to the case for men and boys.

Further, Banga (2013), associates social issues like beliefs, cultural orientations and values learnt from the host society as the major shapers of men and women. This perspective, therefore, makes practical gender awareness a qualification for collaboration between men and women in their effectiveness in the way they manage domestic solid waste. However, Ziraba, Haregu, & Mberu (2016) indicate that less than 30% of the urban waste in developing countries is disposed of appropriately. However, the remaining 70% is poorly managed solid waste and has adverse implications on health depending on the nature of the waste, individuals exposed and the duration of exposure. Further, Haregu, Ziraba and Mberu (2016) opine that there is a strong and clear association between unorthodox methods of solid waste management and adverse health outcomes. Further, they exude that the existing policies aimed at addressing the existing challenges regarding domestic waste management and the related health issues lie below the threshold of the implementing and addressing the challenge.

In their findings, Trevor and Rebecca, (2019) are profound that the hazardous waste from households generally makes up only up to between 1% - 4% of the municipal solid waste. Its ability to bring about risks to humans and the environment however are disproportionate to its size. Further, Rosemary (2022) notes that most hazardous household waste which is disposed together with municipal solid waste can lead to an increase in the hazard status. Not only are household hazardous waste substances potentially dangerous to the environment, but also to the health of humans. In additional, this hazardous waste can induce changes in other waste streams by reacting with other waste to produce more toxic substances.

In their review of the implementation of the developed policies, Haregu, Mberu and Ziraba (2016) illustrates that numerous effort that is brought about and supported by implementation

of policies to manage solid waste in a sustainable way in Kenya, for example, has in many cases been randomized thus fallen short the intended objective. A disconnect therefore exists between the efforts made by the authorities in the management of domestic solid waste and the projected health outcomes. This study therefore seeks to address the health challenges by looking at how gender comes into play by addressing the health specifics of men and women in a community. The importance of gender is that men and women display different interactions given the same environment. Bacanovic (2011) points out that one indisputable phenomenon in the society is the power dynamics in the management of domestic solid waste. This is because the relations between men and women encounter gender dynamically as it sifts through it. In order to facilitate different forms of gendered undercurrents, the understanding of men's and women's concerns dominates in the management of domestic solid waste. The participation of men and women in the management of domestic solid waste and the related health implications using a gender lens, shapes the need to assess their participation within informal settlements in Kenya through a gender lens.

LITERATURE REVIEW

Arimah (2010), Gakungu (2011) and Alam and Ahmade (2013), allude that of the world's total population, 50% live in urban areas. However, majority of these live in informal settlements, where life support systems like garbage collection are wanting. This high congestion is, therefore, a recipe for the generation of the high amount of domestic waste. Fauzia (2009), affirms that the processes of generation, storage, collection, and transfer of solid waste for disposal, is what is used to describe solid waste management.

According to Bacanovic (2011), gender is a principle that filters through the relations that exist among men and women even as they relate with the environment. It includes the operations associated with the knowledge, attitudes and behaviour held by those practising it. Gender roles, for example, are guided by the allocated

duties, opportunities, customs, and the way labour has been divided. These realities are resident in a society and are seen to be the ones that accountable in determining all social arrangements in which men and women relate. Therefore, the actions undertaken within the context of a particular environment are guided by gender. Accordingly, the activation of the infiltration of gender within the social norms is responsible of the different ways in which men and women display their responses to domestic solid waste management, their needs, health, and the environment. Hence, gender norms and its strong dictates are responsible of the differently carried out activities that women and men highly relate with in the community and how they carry them out (Banga, 2013). Gender interactions in a particular society will, however have greater influence than knowledge held by individual men and women. How men differently from women perceive, act upon and manage the generated household solid waste, gender will always play a major role in shaping and adjusting both men's and women's perceptions as well as the activities that point to the management of domestic solid waste. This is regardless of the knowledge held, whether erroneous or accurate.

Therefore, knowledge on itself cannot be the sole determinant to be used in organising issues relating to the management of solid waste. The prevailing gender substructures therefore have portrayed the degree to which men and women get involved in managing domestic solid waste. According to Muhammad and Manu (2013), the socialisation processes are core to exclusively reserve the household chores to women and girls. Further, Muhammad and Manu (2013) affirm that the disposal of solid waste from most households within urban informal settlements, is done in the street, drainages, nearby bushes and the available open space. These locations however eventually turn into breeding grounds for disease causing vectors like mosquitoes as well as breeding areas for rodents, that altogether are a threat to public health. Among the most commonly used methods of waste disposal in most developing countries is illegal dumping. As cited in McAllister (2015),

Al-Khatib, Kontogianni, Abu- Nabaa, Alshami and Al-Sari (2015) and Hilburn (2015) confirm that more often than not, residents within unplanned urban settlements in developing countries turn to domestic solid waste disposal methods that are unconventional. These methods are a source of health concerns for men, women, boys, and girls living in informal settlements in urban areas. However, Mukama, Ndejjo, Musoke, Musinguzi, Halage Carpenter and Ssempebwa (2016) advance that sustainable methods for managing different types of waste should be practised with stringent measures to save the environment and improve the health of the humans living in these areas.

This occurrence is also affirmed by Alhassan and Mohammed (2013) as well as Ojewale (2014), who posit that the developing regions in the globe face the challenges of health within the urban informal settlements due to ineffective disposal of domestic solid waste. The unperceptive disposal of household solid waste in unwarranted areas within informal settlements in urban areas is a warning to a budding poor health.

Similarly, Visvanathan and Glawe (2006) envisage that the domestic solid waste within households is one of the most noticeable bases of dilapidation of the environmental within many urban informal settlements. Further, Asi, Busch and Nkengla (2013) alludes that prior applicable knowledge regarding the gender differentials is importance since it has capacity to shape how house hold solid waste is managed. As such, Gakungu (2011) observes that domestic solid waste management and disposal systems within urban informal settlements in Kenya, are inefficient and environmentally unfriendly. This results in critical health hazards, including garbage heaps of different magnitudes, vectors like flies and rats all that lead to infectious diseases. In addition, when waste decomposes, it releases a stench, which is a combination of harmful gases too much to bear and often times unfriendly to humans. Effortlessly, this scenario becomes one of the central issues to tackle in

regard to hygienic that relates to health among men women and children.

According to Arimah (2010), the urban informal settlements in most developing countries, are characterized by filthy and unwelcoming environmental sanitation. This deplorable state is, no doubt, the cause of untold and inevitable recipe for poor health conditions that are diseases (Owusu-Sekyere, 2014).

Theoretical Framework

The Social Context Theory

This study used the Social Context Theory (SCT) in that it has the principle that society is dynamic and is bound to change over time. According to Briggs (2012), SCT reflects on social features that determine the attitudes, perceptions, and actions of people. SCT ascertains those norms, perceptions, and behaviours that one may have acquired through socialisation, are highly flexible and can systematically be altered within a given social context. Consequently, individuals can be shifted to a well-designed new social context or a new paradigm with completely new experiences from where they can operate. The exhibited perceptions, attitudes and behaviour becomes absorbed in and individual and eventually defines and individual. This therefore, becomes the new behaviour domicile an individual has come to. The Social Context Theory subsequently relates the collaboration between the existing social forces working on individual people's behaviour and group actions that change society.

Therefore, Social Context Theory comes in as a tool for systematically analysing and examining the associated individual's needs and changes in the society from where the consequent result is addressed. The SCT presents itself as a systems model whereby the immediate physical and social setting in which something happens or develops as well as in which people live is referenced. Social integration among community members, therefore, becomes the setting of this theory. By and large, SCT tenets can effectively facilitate broad, creative, and dynamic techniques of involving individuals more productively within

specific social setups. The SCT is therefore used in this study to illuminate and address the construction of social contexts and interactions at both the household and community levels about the health consequences in the management of domestic solid waste. The social context theory proposes a three pronged approach that carry the structures, processes and realities within a social context as its foundation and regards each as having a specific control in establishing new social behaviours. The societal structures are the external shapers or the macro social forces responsible for shaping how individuals relate and carry out their daily activities. This is further moulded by the dynamic internal forces acquired by individuals from an early age. These social processes are a key element in the socialisation of individuals in society. Social realities on the other hand describe what most individuals collectively acknowledge as prevailing common patterns of social behaviour and act as a guide to their thinking and actions. Social forces are encapsulated by individuals as they get constructed by gender within a society. The issues known to adversely affect the behaviour of individuals are lack of good education and poverty among others. In the context of DSWM, men and women within such environments will act unfavourably to the surrounding situations for survival. Eventually, they acquaint themselves with coping survival strategies that lead to illegal dumping and burning which are unconventional methods in DSWN.

METHODOLOGY

This study was conducted in Kiandutu Informal Settlement, Figure 1. This informal settlement is situated south of the outskirts of Thika Town which is about 45 kilometres northeast of Nairobi, Kenya's capital City. Kiarie (2012) notes that Kiandutu Informal Settlement (KIS) is one of the largest heterogeneous urban informal settlements outside Nairobi. Thika, the host to KIS, is a cosmopolitan industrial town. According to the Central Bureau of Statistics (2020), Thika had a population of 279,429 in the 2019 national census. Thika's population grew from 61,475 in 1989

(approximately 77% increase in 30 years). According to Mwathane, Musyoka, and Karanja (2012), KIS rests on private land, registration LR 10226/2/1, with an area of about 39.81 hectares (0.4 km²). KIS is divided into ten villages with the largest in terms of physical area being Molo A and Molo B. These two are uniquely to the south – Eastern region of KIS and occupy close to a one-third of KIS. Both Molo A and Molo B villages have the longest border line to the non-informal areas. The other villages are Biashara, Mosque, Mutatu A, Mutatu B, Stage Wariah, Centre Base, Mikinduri and Kianjau. Both Molo-A and Molo-B are less congested as compared to the rest of KIS. The two smallest villages in the area of study were Mutatu-A and Mosque. Biashara (Swahili word for trade or commerce) village leans more on commercial activities. The many shops there deal with foodstuff, clothes, wood, etc., are located here. However, there is an outflow of the shops into the Centre-Base. The village at the central part of KIS is Centre-Base. The Somali

community living in KIS is concentrated at Stage-Wariah village, thus the name. Within KIS is a Mosque, hence the Mosque Village (*Figure 2*).

The sample size was arrived at through multistage method. The study area was composed of ten villages from which three villages were randomly picked to make 30% of the total population. A sample of 30% is enough to give a conclusion on a population (Grix (2004)). From the three villages, the study applied stratified sampling method. The total population from each village was identified and a 10% population calculated for each village to make the sample size (Gay, Mills and Airasian (2009)). To get the men and women population to participate in the study from each village, the study used the men to women ratio of 46% and 54% respectively to calculate the number of each gender from every village (Kiambu County, 2015 as cited in Mwangi, Kimani, Okong’o, and Majale, 2021).

Figure 1:Thika Town Constituency Map in Kiambu County. It shows the Study Area (Kiandutu Informal Settlement).

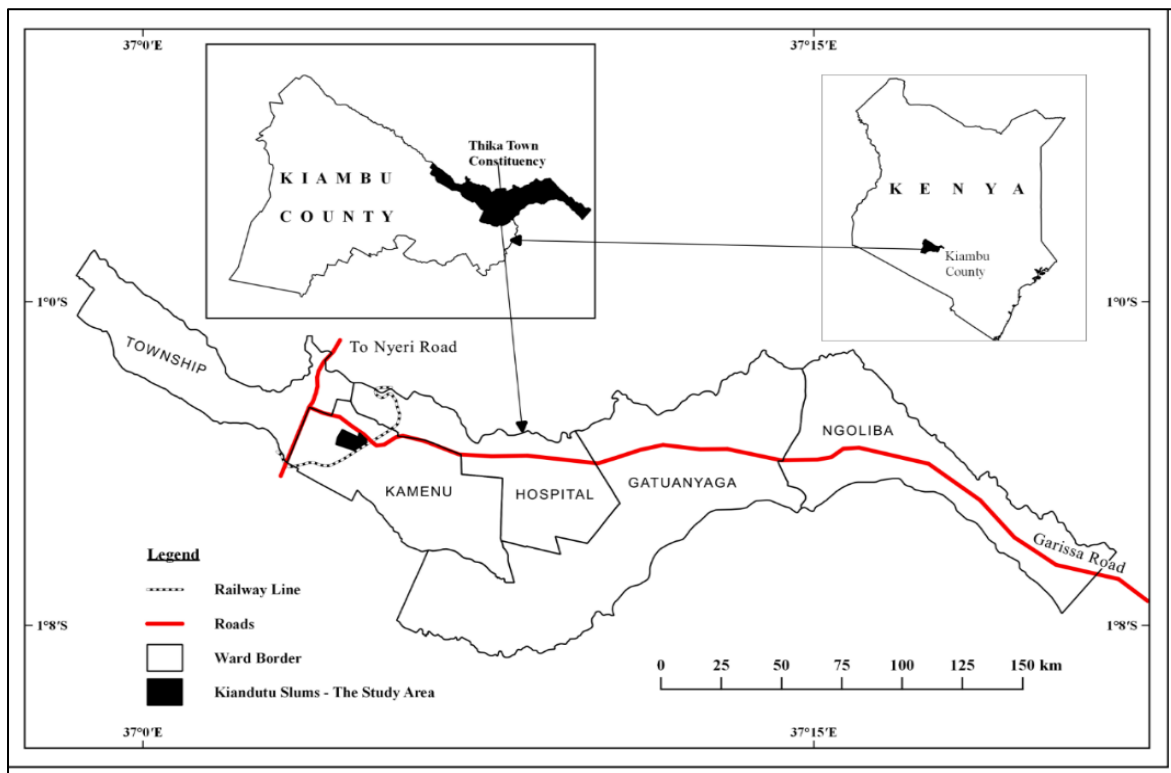
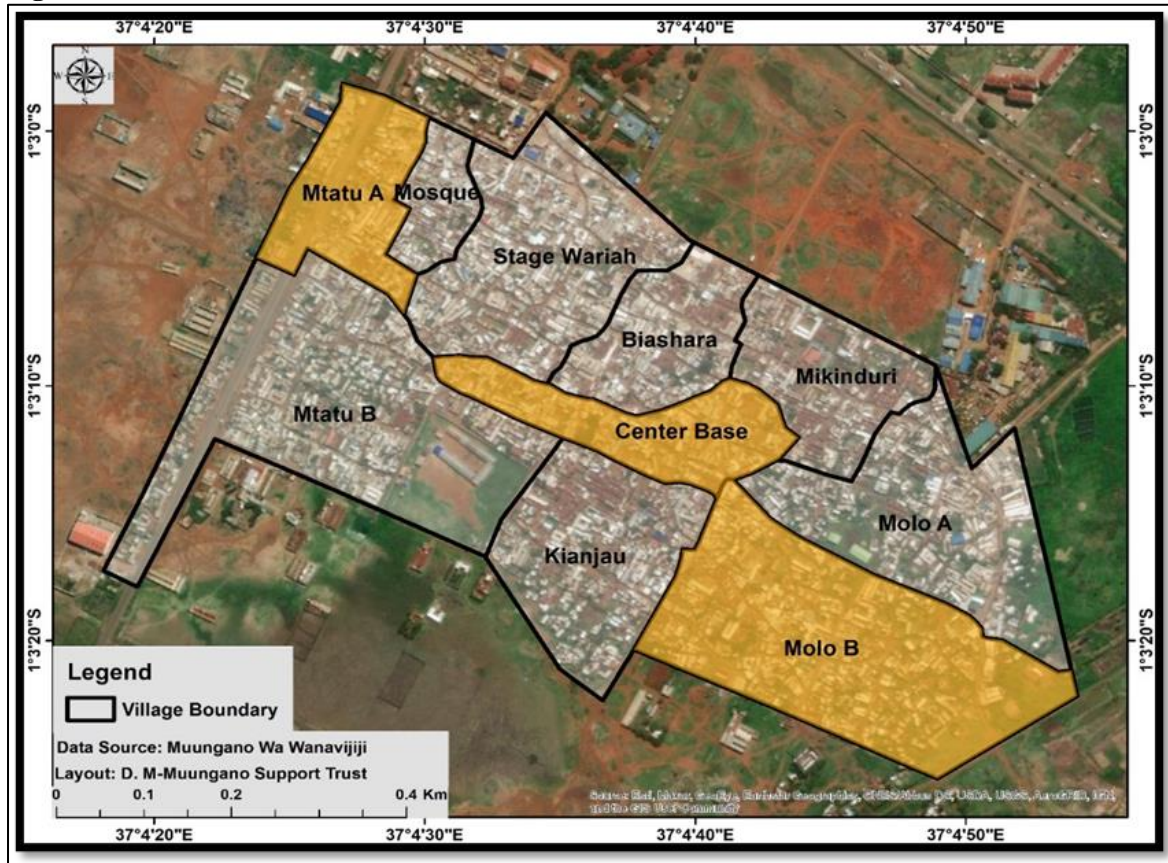


Figure 2: Kiandutu Informal Settlement



Source: (Muungano-Wa-Wanavijiji, 2010)

In addition, twelve (12) key informants were selected to participate in the study. Since each village had one Village Elder, each one of them was purposively selected. Each village had two Community Health Workers (CHWs) selected, male and female (total six) for gender representation. Also included as a key informant was one Community Health Extension Worker (CHEW), in-charge of KIS,. The Area Chief and the County Director of Environment (CDE) were also purposively included as key informants as

they were deemed to have essential information for the study, as *Table 1* presents.

In order to make sure that there was good representation of both male and female headed households in each village selected for the study, purposive sampling technique was used with the help of the village elders. Qualitative studies principally uses this procedure to select the study units on the foundation of specific associated purposes required to answer the research questions (Teddlie and Yu, 2007).

Table 1: Male and Female household heads sample size

| Village Name | Number of households from selected village | Number of selected households per village to participate in the study | 46% of men | 54% of women |
|--------------|--|---|------------|--------------|
| Mutatu-A | 658 | 66 | 30 | 36 |
| Centre-Base | 903 | 90 | 41 | 49 |
| Molo-B | 1,076 | 108 | 50 | 58 |
| Total | 2637 | 264 | 121 | 143 |

Descriptive research design was used in this study. This design permitted the desired data to be collected from the identified respondents. Guided questionnaire, interview and observation schedules, were the tools used for collecting data. This was designed to guide the study to dissertate the gaps relating to health-related challenges among men and women as well as the management of domestic solid waste. According to Orodho & Kombo (2002), the chosen design was found appropriate for it enables the respondents for self-reported facts including their opinions, attitudes and the inner feelings. The required number of the male and female headed household heads was attained for each village upon administering the questionnaires to the respondents. To enable data collection from Key informants, interview guides were used. Further in order to capture the first-hand information, on some specific aspects in the society, an observation schedule was used. This tool was vital in the aggregation of data that addressed DSW practices among men and women.

STUDY FINDINGS AND DISCUSSION

The Respondents Demographics:

Gender

Table 1 shows the number of respondents, both men and women from the selected villages and took part in the study. The observed difference in the number of the household heads, men and women were as a result of the actual households in the selected villages that took part in the study. According to Kimani and Mwikamba (2010), one's gender is important in that it has power to dictate the relations between men and women. Further, it shapes their involvement in specific engagements of life.

Marital Status

One of the definers of power relations within a household is marital status. Power relations specifies the individual who has access to and control of resources. With reference to the management of the generated household solid waste. Further, marital status, in most situations is

likely to have a bearing on the amount and nature of domestic solid waste generated within a specific household. *Table 2* presents the marital status of the household heads that took part in the study for the selected villages. Flood and Pease (2009), postulate that among the married people, (males especially), display attitudes and views that differ from those not married. Additionally, the societal expectations are that men who are married should desist from engaging in stereotyped household chores, for example engaging in the management of household waste as it *demeaning* to men.

As indicated in *Table 2*, the findings of the study, showed that, majority of the respondents across the board were married. However, the number of the married male household heads was higher across all the villages compared to the number of married women. This was a significant indication that KIS was a male-dominated society in regard to family life. However, this scenario was a demonstration of an imbalance of power relations between men and women in KIS. This suggested that more men than women would get involved when it comes to the choice of attending to health issues. However, due to the gender differences in health-seeking behaviours between men and women, the aforesaid alignment within households is likely to affect the household health-seeking behaviours. These findings indicated that the smallest number of male household heads respondents were either separated or widowed. Comparing this with female household heads in the study, who were either separated or widowed, the women were more. In addition, the study showed that the women in reference lived together with own child or children.

The attitudes and perceptions couples by performed activities in regard to domestic solid waste is well defined within the context of family. In alignment to these specifics in family, the social context theory proposes that the family is central to the determination of an individuals' perceptions, attitudes as well as the actions. This in turn influences decision-making concerning

any actions to be taken regarding the household solid waste. Furthermore, family culture and values are determined and taught within a family set-up. Consequently, the family type and size had a bearing on the way men and women carried out the management of the solid waste from households as well as the approach to health matters.

Income

The money accrued as income by men and women in the study area was a significant variable since it has capacity to shape the financial environment of individuals, the family and the society at large, and the family as well. According to Hoornweg and Bhada-Tata (2012), individuals with high income have a greater opportunity to generate a larger amount of domestic solid waste than those with a lower income. The former cadre of individuals and families are therefore more likely than the latter to have greater exposure to contaminants or disease-causing pollutants. The level of one's income level is therefore a determinant of the amount and type of solid waste generated. The monthly income tiers are presented in *Table 3* in local currency, the Kenya shilling (Current exchange rate: 1US Dollar = Ksh. 130).

At Centre-Base, there was a well differentiated indication in terms of what individuals earned. This was prompted by men owning the major commercial entities like eateries, butcheries and cloth shops. Women on the other hand, operated retail vegetable kiosks.

With reference to the comparative economic power that a family is endowed with, it acts as a relative guide to the kind of health services a family seeks. Notwithstanding, the incomes made by the respectful individuals, however, has not lifted the KIS inhabitants out of poverty, hence their expression to seeking apposite health services save for the under-fives whose services are offered for free by all government hospitals (National Council for Population and Development, 2012). Cheru (2016) asserts that the financial power of an individual has power to

prescribe and determine the items to shop as well as their quantity. One's health is consequently seen as being dependent on their lifestyle pursuits. Since each action is geared towards determining what to eat and what not, there is therefore a strong linkage between what one feeds on and the individuals' health. Further, the financial capacity determines the amount and type of the household generated solid waste.

Further, the Key Informants gave relevant information regarding the management of domestic solid waste and its relationship to health. The inclusion of statements made by the key informants were important because they had a bearing on the conclusions of the study. These statements were categorized into two themes: knowledge base and gendered socialization. These two elements were considered to have a compartment that affected the health of men, women, boys, and girls living in Kiandutu Informal Settlement.

Responding to why men and women sought to involve themselves in burning the household solid waste. A female Community Health Worker alleged that:

Burning of waste from our houses is the best option we have for getting rid of the waste. It however sometimes may turn against us when the burning takes place very near the houses as it may cause a fire outbreak (Female Community Health Worker Centre-Base: Nov, 17th 2015).

In another response to the same enquiry, a Village Elder replied by saying,

When waste is burnt, the smoke produced helps to keep away rats and snakes from our houses. However, when a lot of rubbish is being burnt, so much smoke enter the houses. (Community Health Worker, Molo-B: Nov, 12th 2015).

Further, the female Community Health Workers from Molo-B commented and said;

Unlike Kianjau, Centre-Base and Biashara villages, Molo-A and Molo B villages are

sparsely populated. In those congested villages, there is no space to dump the waste. Sometimes, people may in the night just dump at your doorstep. There are also the flying toilets that are more common there than here (Referring to Molo B). (Female Community Health Worker Molo-B – 19th November, 2015).

Additionally, responding to why burning was carried out by the residents of KIS, the CHE worker said is an FGD:

It is a common practice by both men and women to burn the solid waste from households. Although the practice is still carried out, it is obvious that the practice can be dangerous. It presents a number of threats that include health consequences, breaking out of fires and environmental pollution. (FGD: Key Informants, Nov. 25th, 2015)

A similar sentiment was articulated by a village elder respondent from Mtatu A specifying that;

'Everybody, dumps the household solid waste everywhere including on the road, ditches, and incomplete constructions. There is little care about where to throw away the waste (Male village elder from Mtatu A- 10th November, 2015).

Further, the study established that most of the illegal dumping practice were due to care free lifestyle by men and women. This lifestyle encourages a 'dirty culture' in crowded urban populations. This was confirmed during an FGD where a village elder asserted that:

Since the waste from our houses is not collected by anyone, all of us result to getting it out the house to anywhere out there: be it on roads, ditches, or any open area. Men and women from all over say that there is nowhere to throw the garbage (FGD with the Key Informants, 25th November, 2015)

From this sentiment, dumping was regarded as one of the ways of managing domestic solid waste. The male Community Health Workers across the three villages expressed a common

thought flow to show the low level of understanding of the best practices in the management of the domestic solid waste.

All the waste from my house must be thrown away. It does not bother me where the waste ends up....my problem is to get it out of my house. FGD with the Key Informants, 25th November, 2015)

Further, this study has established that most illegal dumping practice were due to care free lifestyle by men and women. This lifestyle encourages a 'dirty culture' in crowded urban populations. This was confirmed during an FGD where a village elder asserted that:

We do not have a system to help us collect refuse. Once the waste leaves the house, it can be disposed of to different locations including ditches, open spaces or even on roads and pathways. Men and women from all over say that there is nowhere to throw the garbage (FGD with the Key Informants, 25th November, 2015)

These statements give a reflection of a society that has a certain knowledge about the management of domestic solid waste although that held knowledge may not serve for the benefit of a healthy community.

Further, the result gives an inner reflection of the position that men hold in the society that any tasks related with the domestic chores is a preserve for women. This was affirmed by a male village elder from Centre-Base who said that;

My cultural position is that women are supposed to do all the work in the house. There are things that men should do and women should do. There will be a conflict if this is not followed. If any challenges regarding the waste arise, it is the women to solve them. But maybe men can engage in talking to the County Government for assistance. (Village Elder: Centre - Base – Nov. 17th 2015).

Table 2: Marital Status for the Heads of Household in Villages selected for study

| Marital Status | Mutatu - A | | | | Centre - Base | | | | Molo - B | | | |
|----------------|-------------|------|---------------|------|---------------|------|---------------|------|-------------|------|---------------|------|
| | Men n=30 | | Women n=36 | | Men n=41 | | Women n=49 | | Men n=50 | | Women n=58 | |
| | FC | % | FC | % | FC | % | FC | % | FC | % | FC | % |
| Married | 23 | 76.7 | 4 | 11.1 | 30 | 73.2 | 5 | 10.2 | 36 | 72.0 | 6 | 10.3 |
| Single | 4 | 13.3 | 2 | 5.6 | 6 | 14.6 | 4 | 8.2 | 8 | 16.0 | 5 | 8.6 |
| Separated | 2 | 6.7 | 18 | 50.0 | - | - | 27 | 55.1 | 2 | 4.0 | 25 | 43.1 |
| Widowed | 1 | 3.3 | 12 | 33.3 | 5 | 12.2 | 13 | 26.5 | 4 | 8.0 | 22 | 37.9 |
| TOTAL | 30 | 100 | 36 | 100 | 41 | 100 | 49 | 100 | 50 | 100 | 58 | 100 |

(FC – Frequency Count)

Table 3: Income levels of the study respondents in villages selected for study

| Monthly Income (Kshs) | Mutatu - A | | | | Centre - Base | | | | Molo - B | | | | Total | |
|--------------------------|-------------|------|---------------|------|---------------|------|---------------|------|-------------|------|---------------|------|-------|-------|
| | Men n=30 | | Women n=36 | | Men n=41 | | Women n=49 | | Men n=50 | | Women n=58 | | Men | Women |
| | FC | % | FC | % | FC | % | FC | % | FC | % | FC | % | | |
| Below 3000 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0 |
| 3001- 4000 | 2 | 6.7 | 4 | 11.1 | 1 | 2.4 | 5 | 10.2 | 3 | 6.0 | 3 | 5.2 | 6 | 12 |
| 4001- 5000 | 9 | 30.0 | 9 | 25.0 | 4 | 9.8 | 9 | 18.4 | 6 | 12.0 | 12 | 20.7 | 19 | 30 |
| 5001- 6000 | 8 | 26.7 | 7 | 19.4 | 3 | 7.3 | 7 | 14.3 | 11 | 22.0 | 19 | 32.8 | 22 | 33 |
| 6001- 7000 | 3 | 10.0 | 9 | 25.0 | 6 | 14.6 | 18 | 36.7 | 8 | 16.0 | 15 | 25.9 | 17 | 42 |
| 7001- 8000 | 2 | 6.7 | 1 | 2.8 | 11 | 26.8 | 7 | 14.3 | 9 | 18.0 | 4 | 6.9 | 22 | 12 |
| 8001& above | 6 | 20.0 | 6 | 16.7 | 16 | 39.0 | 3 | 6.1 | 13 | 26.0 | 5 | 8.6 | 35 | 14 |
| | 30 | 100 | 36 | 100 | 41 | 100 | 49 | 100 | 50 | 100 | 58 | 100 | 121 | 143 |

Additionally, among most African cultural setups, boys and men seldom engage with daily responsibilities in the house. The management of household waste, specifically is a preserve for women and girls. One of the female key informants from Molo - B said;

We have only the open space to dispose of the waste from our houses and nowhere else. Everyone discards their garbage on the roads and path ways. Sisi sio watu wa maana kwao (We, the residents here seem to be quite unimportant to the authorities). No one thinks or cares about us. (Key Informant: Molo - B Nov. 22nd 2015).

Finally, confirming of a significant need for an overhaul of waste management as per the waste management needs of the residents in the area of study. In an interview, the Director in charge of Environmental issues in Kiambu County was quick to expressed the requirement to put in place proper systems for managing the garbage generated in KIS. The CDE consequently alleged,

The County Government is aware of the myriad solid waste challenges the residents of Kiandutu Informal Settlement have to deal with. The whole informal settlement definitely needs a lot of assistance from the institution in charge of environment in the Kiambu County. If only the informal settlement residents can agree to work alongside the County Government, the situation can be averted. (Interview with the Kiambu County Director of Environment, 22nd November 2015)

CONCLUSION AND RECOMMENDATIONS

The study therefore makes a conclusion that deep gendered socialization curtesy of the culture of a people coupled with inadequate information in the management of domestic solid waste are the major contributing factors to the poor management of domestic solid waste. In principle, these two factors work together to contribute to poor health of the men. Women boys and girls in Kiandutu Informal settlement. The indiscriminate illegal

discarding of DSW into the trenches, open spaces and along the roads were cited by the study as the factors at the forefront in contributing to the adverse effects on the peoples' health – both men and women as well as the children, the environment and increased unstable social life as well as poverty. Women's perceptions of domestic solid waste were informed by the notion of the consequences of unmanaged household waste, with one of them being increased incidents of sickness while their male counterparts were not deterred and affected as much because of their differences in health-seeking behaviours and ascribed meaning of domestic solid waste. Women's perception lounged greater on the concern for their children's health as a result of the unmanaged waste. The disease and illness occurrence affected and depleted their income as well as their generating activities when taking care of the sick children. The statements by the County official further affirms that there exists a gap in the policies dedicated to solid waste management. While these policies focus on the solid waste in general, there is need to focus on the development of the generators of that waste and especially within homesteads. Therefore, this study recommends the formulation and implementation of gender sensitive policies that are specific to households. This is because men and women see, interact and handle domestic waste differently. What a man may regard as waste, a woman on the other hand may see it as something she can put into further use, and vice-versa. These policies can be used in the creation of awareness and educating men and women in respect to the management of the solid waste from the households. However little the solid waste from the households may be, if improperly managed can turn to be dangerous to affect the health of those who generated it.

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