

THE PROPOSED BAN OF DISPOSABLE BABY DIAPERS IN ZIMBABWE: VIEWS FROM OLD SENGA RESIDENTS, IN THE CITY OF GWERU, ZIMBABWE

REMIGIOS V. MANGIZVO¹, ABIGAIL LUMBE² & ALEX SIBANDA³

¹ Department of Geography and Environmental Studies, Zimbabwe Open University, Midlands Regional Campus, 16 Victory Rd, Gweru East Gweru.

²Department of Media Studies, Zimbabwe Open University, Midlands Regional Campus, 16 Victory Rd, Gweru East Gweru.

³Department of Records and Archives Management, Zimbabwe Open University, Midlands Regional Campus, 16 Victory Rd, Gweru East Gweru.

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ABSTRACT

The study aimed to establish the views of residents of Old Senga, City of Gweru, on the proposal by the government to ban disposable baby diapers in Zimbabwe. Soiled disposable baby diapers have become an environmental nuisance. The issue of whether diapers should be banned or not has generated a contentious debate in the country. This qualitative study was conducted in Old Senga, a high-density residential suburb of the City of Gweru, Zimbabwe. A questionnaire survey, interviews and observations were employed to gather information. Purposive sampling was used in the selection of participants. The study established that there were mixed feelings concerning the proposed ban on baby diapers. Proponents of the government's intention felt that most nursing mothers were ignorant regarding how to dispose of soiled diapers. Opponents of the ban felt that nursing mothers should move with the times and use disposable diapers, as the use of cloth diapers was old-fashioned. The study concluded that disposable baby diapers were now a permanent feature, particularly in urban settings. The study, therefore, recommends that producers of diapers should include instructions on environmentally friendly disposal methods for soiled diapers. Mothers should be encouraged to dispose of soiled diapers in an environmentally friendly manner.

Keywords: Ban, disposable baby diapers, environmental health, Gweru City, Zimbabwe

1.0 BACKGROUND TO THE STUDY

Zimbabwe is saddled with the problem of disposing of used disposable baby diapers. According to Shambare (2022), used diapers are now an eyesore in most urban areas of Zimbabwe as they can be seen strewn everywhere across the country, including in the central business district and along roads. Disposable diapers may be defined as a type of absorbent disposable underwear that is fastened to a baby's bottom to soak up its urine and human faeces to prevent the soiling of outer clothing or the external environment (Eja, 2014). Since disposable diapers entered the European and American markets in the 1950s, their evolution has progressed to the African markets as well (Khanyile et.al, 2020). They have become an essential commodity which most women in Zimbabwe and other parts of the world depend on. Kamat and Malkani (2003) regard disposable diapers as an indispensable baby care product which is always included on the day-to-day shopping list. However, disposable baby diapers

have become an environmental nuisance, especially in Zimbabwe's urban areas. According to Mbiba (2014), disposable diapers are a problematic waste that has recently emerged in Zimbabwean cities and is suffocating the environment.

Since 2015, the Government of Zimbabwe, through the Environmental Management Agency (EMA), has been contemplating banning the use of disposable diapers in the country because of the environmental challenges they present (Nyoni, 2015). EMA is a statutory body responsible for the sustainable management of natural resources as well as the protection of the environment. Its other responsibility is to prevent environmental pollution and degradation. Its other responsibility is to prevent environmental pollution and degradation. EMA has continued to lobby for the banning of baby diapers because of their impact on the environment (Gwarisa, 2020; Tshili, 2020). The then Minister of Environment, Water and Climate also weighed in by proposing the banning of diapers which would be replaced by biodegradable diapers, reusable cloth diapers and hybrid diapers, as a way of ending environmental pollution in Zimbabwe (Zigara, 2016).

Literature shows that several cities in Zimbabwe have indicated that they are facing challenges in dealing with soiled disposable baby diapers. They expressed the general view that diapers have become a nuisance that was posing a challenge on their waste management, hence they should be banned. According to Lubinda (2016), Harare, the capital city of Zimbabwe has been struggling to discard disposable baby diapers properly. They dispose of them at Pomona dumpsite, mixed with other domestic wastes, thereby creating an environmental hazard. Observations made in Masvingo, the oldest city in Zimbabwe, were that diapers were being dumped anywhere in a reckless manner. According to Matsongoni (2019), residents of the City of Masvingo were not paying attention to the safe disposal of sanitary pads and diapers, yet they are harmful to the environment. This, therefore, prompted the then mayor in 2020 to propose the banning of disposable baby diapers since they exposed the city to several environmental health challenges (Mugabe, 2014). The mayor claimed that most of the city's residents felt that disposable diapers should be banned. Some councillors in Bulawayo, the second largest city in Zimbabwe, advocated for the banning of disposable diapers as they constituted most of the litter in the city (Zulu, 2019). They felt that some residents lacked knowledge on how diapers should be disposed of. Some residents dumped them in undesignated areas, creating breeding areas for diseases such as cholera and typhoid. Observations made in the respective cities reflect what is obtaining in several urban and rural areas of Zimbabwe. The same situation of poor disposal of soiled diapers is affecting many areas worldwide.

It is apparent that users of disposable diapers lack knowledge on how to dispose of soiled diapers. According to Muia (2018), although the use of disposable diapers is increasing in developing countries, there is a general lack of expertise and financial resources that can help in acquiring the necessary technologies to deal with soiled disposable diapers. Users disposable diapers are disposing of them in a reckless manner; hence they soiled diapers are found anywhere, thereby polluting the environment. According to Tsiko (2011), diapers are amongst billions of plastics, kaylites and electronic junk which are scattered around the landscape across Zimbabwe's urban centres. They have also become a common feature at illegal dumping sites that emerge in open spaces in most suburbs, particularly high-density areas in cities and towns across Zimbabwe where they are an aesthetic nuisance (The Standard, 2011). They are also

found along roadsides and drains within the urban environment. Some of the diapers find their way to landfills where they constitute a significant proportion of the solid waste (Ayalon et al, 2009; Meallem et al. 2010). Disposable baby diapers are therefore a ready source of environmental pollution (Nhutsve, 2014).

Diapers pose a serious threat to the environment because they are not biodegradable. The constituent parts making up diapers include plastics; hence they may take between 200 and 500 years to decompose completely (Morganti and Febo, 2017). Poorly disposed diapers tend to block sewer pipes (Mangizvo, 2014). According to Singende (2022), Harare, the capital city of Zimbabwe, experiences frequent blockages and damages to its obsolete sewer network. This is caused by about 25 tonnes of objects that include diapers that are dumped into the system (Singende, 2022). Some nursing mothers and caregivers tend to flush soiled disposable baby diapers in the toilets. Once they absorb water, they increase in volume and clog the sewer pipes. Sewerage flows by gravity, and the introduction of foreign objects into the system such as diapers, leads to blockages (Singende, 2022). Sewer water from burst pipes is an environmental health hazard. It is odorous, and it attracts vermin such as flies and mosquitoes, which spread diarrhoeal diseases and malaria respectively. It also compromises the aesthetic value of a place.

The diapers that are recklessly disposed of in the environment may contaminate water sources. When it rains, diapers that contain human waste may be carried to different types of water bodies such as streams, rivers and dams (Kamba, 2018; Khanyile et al., 2020; Tshili, 2020). This negatively impacts the physical, chemical and bacteriological composition of raw water. Owen (2017) made similar observations in South Africa, whereby the soiled diapers that are discarded along roads and bridges end up in streams and rivers. Discarded soiled diapers result in river pollution thereby pushing southern Africa's rivers to the limits of sustainability (Owen, 2017). Furthermore, pollution of water sources increases costs for responsible authorities as water treatment is a long and expensive process (The Herald, 22 December 2014). Highly polluted water needs a higher chemical dosage in the form of aluminium sulphate, sodium carbonate, lime, chlorine and soda ash, among others to treat it-. These are very expensive chemicals, and some local authorities are unable to procure all of them. This ultimately compromises the quality of potable water delivered to households.

Diapers have become a potential environmental health threat which can result in the spread of diarrhoeal diseases. Between August 2008 and June 2009 Zimbabwe succumbed to its worst cholera epidemic in history which was partly caused by poor waste management. According to Ahmed et al. (2011) an estimated 95,531 suspected cases of cholera and 4,282 deaths due to cholera were recorded. In subsequent years, Zimbabwe continued to experience numerous cases of cholera, typhoid and dysentery and other diarrhoeal diseases linked to poor solid waste management, including the poor disposal of soiled diapers.

Decomposing diapers release methane, a colourless, dangerous and highly explosive gas into the air (Rahat et.al, 2014).). It is argued that dump sites emit around 20% of the world's methane and 11% of black carbon (Climate Champions and Engineering, 2022). Methane is a greenhouse gas which contributes to global warming and ultimately climate change (United Nations Environmental Programme, 2021). Methane also readily displaces oxygen in the natural environment (Yusuf et. al, 2016). The presence of methane at landfills and dumpsites

encourages the development of fires that can rage for weeks or months. The fires produce carbon dioxide and carbon monoxide which have negative effects on people's health. Exposure to carbon dioxide and carbon monoxide for long periods may worsen respiratory diseases such as asthma, and chronic bronchitis, cause skin diseases, eye inflammation, hypertension and gastrointestinal infections (Jadoon et. al, 2022).

Some individuals end up burning diapers as a way of discarding them. This emanates from the fact that nursing mothers have limited options of disposing diapers in a sustainable manner. Open burning of disposable diapers along other solid wastes is popular in countries such as Kenya and Zimbabwe where it constitutes 10.34% and 40% of total disposal methods respectively (Muia, 2018; Wambui, Muchiri and Makindi, 2015) The process of burning diapers produces toxic greenhouse gases such as chlorine, carbon dioxide and carbon monoxide. They also emit dioxins, furans, toxic ash, particulate matter and smoke that are released into the atmosphere (Mangizvo, 2014). There is a high probability that the ash which may be dispersed by the wind or leached by water into the ground may contain toxic pollutants, which may be inhaled leading to respiratory problems (Ntekpe et al., 2020). It is against this backdrop that this study was conducted with the aim of establishing whether it is feasible to continue utilising disposable baby diapers or to have them banned as proposed by the Government of Zimbabwe.

2.0 STATEMENT OF THE PROBLEM

Disposable baby diapers have become an environmental nuisance; hence the Government of Zimbabwe is proposing to ban their use in the country. The proposal to ban disposable baby diapers has therefore resulted in a contentious debate among different stakeholders.

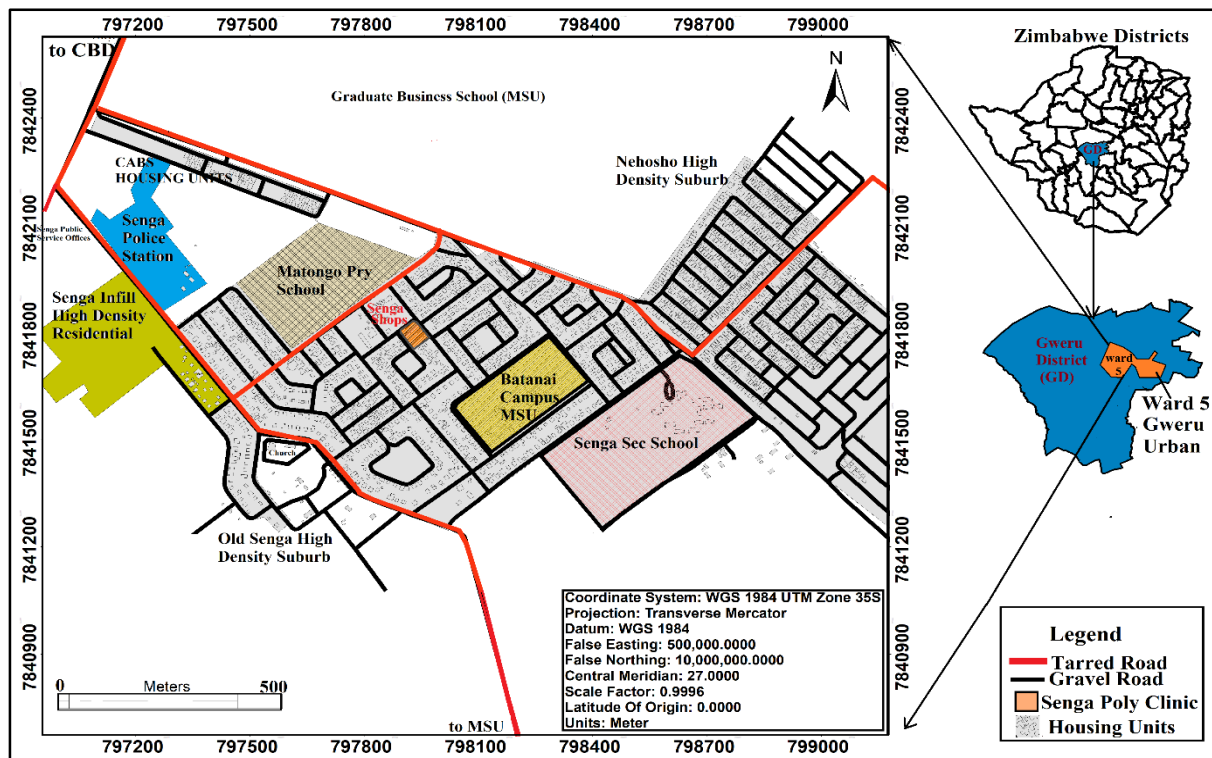
2.1 Research questions

This study was guided by the following questions:

- Why have disposable diapers become an indispensable commodity in the lives of mothers in Old Senga?
- How is the ban on disposable baby diapers likely to affect nursing mothers in Old Senga?
- How can disposable baby diapers be used in an environmentally friendly manner in Old Senga?

2.2 Study Area

This study was conducted in Old Senga residential suburb in the City of Gweru. Old Senga is located 6 kilometres from the city centre, in the Southeastern part of the city. It is one of the oldest high-density suburbs of the city. Municipal documents show that the suburb has 383 houses with a population of about 5000 people. A situation whereby two or more families share one house is a common phenomenon in the suburb. This is a result of inadequate housing in the city. Such a scenario creates an increase in the amount of waste that is generated. The city council is responsible for service delivery to the suburb. The council collects refuse bins once a week on Thursdays.



Location of Old Senga suburb in the City of Gweru

3.0 METHODOLOGY

The study was mainly qualitative in nature. It utilized questionnaire survey, face-to-face interviews, observations and document analysis to gather data on issues surrounding the use of diapers and the proposal by the Government of Zimbabwe to ban their use. This study adopted the qualitative paradigm because it intended to capture and analyse information conveyed through language by those who were either involved in the use of disposable baby diapers or they had knowledge on their use and disposal. The qualitative methodology also captures the behaviour of participants in their natural setting. Through this methodology, the study was able to capture aspects such as beliefs, values, feelings, and motivations that are associated with the use and disposal of diapers.

The study was able to observe how diapers are used in a real-life situation as it had access to perspectives of individuals using or affected by their use. Purposive sampling was used to select participants for this study. These were the nursing mothers who shared the same characteristic that of using disposable diapers at the time the study was conducted. Snowballing was used to identify the nursing mothers as one participant led the research team to the next participant. The participants consisted of working women, in full-time employment, self-employed women as well as housewives. The study also used purposive sampling to select four other participants in this study. These were composed of one official from the Environmental Management Agency, one official from the Gweru City Council, and two academics from the Department of Geography and Environmental Studies from a local university. These were viewed as experts on environmental issues and were expected to provide expert knowledge on the impacts of soiled baby diapers on the environment. They were also expected to give their informed

views on the proposal by government to ban disposable baby diapers. In-depth interviews were conducted with these experts. The study reviewed documents such as newspaper articles and municipal records with various issues on the use of diapers and how communities dealt with soiled diapers. This was done to get an insight on the government's intention to ban diapers. The proposal to ban diapers was mentioned in both the national and local newspapers. These newspaper reports provided vital insights on the issue of disposal of soiled baby diapers.

The study also utilized observation on how diapers were being disposed of in Senga. Visits were made to illegal dumpsites in open spaces and to the city's landfill to observe the incidence of diapers in the environment. Observations were also made on the impact of diapers on drains in the suburb. Observations were also made on how women dealt with used diapers in their homes. Observations were useful as they provided important information on the incidence of soiled diapers on the environment. The thematic approach was used to analyse data generated in the study.

3.1 Significance of the study

This study is viewed as critical because disposable baby diapers have really become an environmental menace. As already mentioned, the environment, both rural and urban, is suffocating from soiled diapers which have been dumped on the environment. This exposes people to communicable diseases. Looking at Agenda 2030, environmental degradation is a key element that requires attention. According to Alexander (2021), the future of our environment is under threat considering the rate at which people are using and disposing of diapers. Man-made environmental degradation therefore needs to be dealt with in order to attain a better and more sustainable future as dictated by the United Nations Sustainable Development Goal (SDGs) number 11 which states that cities and human settlements should be inclusive, safe, resilient and sustainable. According to target 11.6 of SDG 11, by 2030, the adverse per capita environmental impact of cities should have been reduced (United Nations Zimbabwe, 2023). This includes paying special attention to air quality and municipal and other waste management. Alexander (2021), observes that just for the disposable diapers, the U.S. babies will wear, over 200,000 trees are cut down every year, while disposable diapers generate over 3.5 million tons of waste each year.

It is however important to appreciate that diapers are viewed as an important commodity as some users regard them as a status symbol. Some women look at diapers as useful technology that takes away the burden associated with the washing of napkins. Several urban areas are facing serious water challenges and disposable diapers appear to provide a solution to nursing mothers.

4.0 FINDINGS AND DISCUSSIONS

Observations made during the study showed that diapers were a common feature at illegal dumps in and around Old Senga. These illegal dump sites were a familiar sight on the edges of the residential area as well as open spaces. Illegal dumps were also observed on the drains. Diapers could be seen in heaps, or in paper bags as well as single items. The study estimated the soiled disposable diapers to constitute approximately between 30 and 50 percent of the waste in those illegal dump sites. In most cases, swarms of flies were observed on these dumps, thereby creating a health time bomb for Old Senga. Flies, which transmit diarrhoeal diseases

can fly up to five (5) kilometers before resting (Pickford, 1983). Decomposing diapers were observed during the study. These also attracted flies, whilst they had the potential of producing methane gas as alluded to earlier on. Where open burning was used to reduce the amount of waste on illegal dumps, it was evident that diapers could not be consumed by the fire. They remained as ugly half burnt crumbs which negatively affected the aesthetic value of the place.

Two contentious views on the intention to ban the use of disposable baby diapers in Zimbabwe emerged from the study. One side of views was in support of the ban, while the other side was opposed to the ban. This study begins by looking at views from those opposed to the ban and then later look at what those in support of the ban said.

Issues were raised by the respondents who opposed the intended ban. Responses obtained in the questionnaire survey suggested that the government of Zimbabwe was not responsive to the changing global trends. A number of participants who were opposed to the intended ban indicated that it was no longer fashionable to use cloth diapers. Participant 1 had this to say:

Modern women cannot be seen using the cloth diapers as that is old fashioned. It is embarrassing for women particularly the young generation to continue using the cloth diapers. Women should move with the changing times. It is a retrogressive move since we are living in modern times.

This view was supported by Academic 1 who felt that there was need to move with the changing times. He said that the government should not ban disposable diapers as they had been adopted globally. Instead, the government needed to find ways of disposing of diapers. The academic also challenged fellow academics to conduct research on ways of dealing with soiled diapers.

It was apparent to this category of women that fashion was the driving force behind the upsurge in the use of disposable diapers, especially by the young nursing mothers. This, in a way, pushed some nursing mothers to use disposable baby diapers as they were worried about what the community thought about them if they used cloth diapers. It was therefore apparent that some women ended up going for the cheaper version of diapers just to show the world that they were using diapers. Observations made during the study indicated that a lot of street vendors sold disposable baby diapers from their homes as there was a ready market for this commodity. A closer inspection of most of these diapers revealed that they were the cheap and less durable brands. Soiled disposable baby diapers also dominated the solid waste dumped at illegal dump sites at street corners and in open spaces in Old Senga. A visit to the city's MacFaden Dump Site showed that disposable baby diapers featured prominently among the different forms of solid waste. Basically, the prevalence of disposable baby diapers reflected an increased desire to use adopt the diapers amongst nursing mothers.

The second main concern raised by the participants opposed to the intended ban was that disposable baby diapers were convenient under the prevailing economic environment. They argued that women were generally working outside their homes, either formally or informally in order to provide for their families. Participant 2 said:

The economic hardships have made it necessary for women to be engaged in one form of economic activity or another. Women are busier than before. They have to go out

and sell different commodities as a way of dealing with difficult economic environment. This means they no longer have time to wash cloth diapers which require a lot of time and effort. Some women only arrive home late, so, considering the several chores they have to attend to, the disposable baby diaper is convenient.

Participant 2 went on to mention that unlike cloth diapers, disposable baby diapers were convenient because one could “use and throw them away”. She indicated that the municipal council was no longer providing waste bins to residents and also that waste collection in the suburb was erratic. Some participants said that they collected soiled in plastic bags hoping to have them collected by the garbage truck on its weekly collection day. However, if the truck fails to turn up they had a number of options. They either dumped the soiled diapers at the open dump site close to their houses or they buried them underground or they attempted to burn them. Observations made during the study showed that there was a proliferation of dump sites in open spaces within Old Senga and on the outskirts of the suburb.

Interviews with some working mothers and young housewives revealed that disposable baby diapers were easy to use. They were not as laborious as cloth diapers, which, on top of being washed, required to be pressed or ironed with a hot iron. Given that the availability of electricity was a serious challenge, disposable diapers were handy. Working mothers also revealed that cloth diapers were a real challenge during the rainy and winter season when they took long to dry. They therefore preferred disposable baby diapers which they said had few hassles. Participant 3, a working mother had this to say:

I am not a professional, but I work as a vendor. I take my baby with me to my vending place. It is so inconvenient to carry napkins as I might need more than five. The storage of soiled napkins is a challenge unlike disposable diapers which one just throws into the nearby bin on the pavement I operate from. I just roll and throw the soiled diaper into bin and continue with my business.

Sentiments expressed by participant 3 show that such kind of diaper disposal contributed to the ever-increasing quantity of disposable baby diapers at the municipal dumpsite. A visit to MacFaden municipal dumpsite showed that used disposable baby diapers constituted approximately five percent (5%) of the solid waste. Similar observations were made by Nteke et. al (2020) whereby globally, the use of disposable diapers represented about four percent (4%) of solid waste in landfills. They constituted the third largest single consumer item in landfills. Kanyile et al. (2020) weighed in by saying about 1.1 million tonnes of disposable diaper waste that is produced annually in South Africa is destined for the landfills.

The third main concern that was raised by women opposed to the ban of disposable baby diapers was that Old Senga, just like most suburbs in Zimbabwe’s urban areas, was experiencing serious water shortages. Water was being rationed as the city council was unable to provide potable water because of a number of factors. These included obsolete pumps and pipes which consistently break down, power outages at Gwenghor which affected the pumping capacity, and lack of chemicals to treat water (Mangizvo et.al, 2016). During the time the study was being conducted, the suburb was receiving water for only two days in a week. This situation was not conducive for the use of cloth diapers which required a lot of water. The Government of Zimbabwe, in its proposal to ban disposable baby diapers was pushing for the return of cloth diapers or napkins. The participants revealed that cloth diapers required to be

soaked for a while before being washed if they were to maintain the whiteness desired by nursing mothers. Participant 4 had this to say:

In this situation where we have a water crisis, it is advisable to use disposable baby diapers as it is not hygienic to keep piles of unwashed diapers. These attract flies and may lead to diarrhoeal diseases such as cholera and typhoid. Furthermore, the absence of potable water may push nursing mothers to use unclean water. This will make it difficult to retain the whiteness of the napkins, which is the pride of every mother.

It is therefore apparent that these participants felt that women had gender-prescribed domestic chores such as attending to children, cooking, and many more. This left them with very little time to attend to some developmental projects such as adult education and income generating activities. They argued that disposable diapers removed a lot of burden from them. The use of disposable baby diapers enabled them to do other things since they did not require any washing. They simply threw them away after use. It was clear that these participants were not aware of the correct use of disposable baby diapers as they also required the use of water.

It also emerged that those who supported the use of disposable baby diapers were of the view that cloth diapers were no longer readily available in local shops. Some mentioned that the factories that used to produce the cloth diapers such as Merlin in Bulawayo had closed shop because of the economic meltdown that affected the country since the turn of the new millennium. Chasokela (2019), made similar observations and avers that most companies that produced cloth napkins in Zimbabwe and beyond, had either downsized, closed or changed technologies and were now producing disposable diapers.

They also argued that durable cloth diapers could only be imported from countries such as South Africa. The general feeling was that re-usable napkins had a high initial cost. Some participants also argued that reusable napkins had several additional costs. For example, Tshili (2020) observed that the use of reusable napkins requires a set of supporting products such as napkin liners, waterproof plastic pants, nappy pins and special detergents required for soaking them.

Those in support of the continued use of diapers also said that brands which were available locally were too thin and not durable. These could not endure several washings that are required. Furthermore, they did not save their purpose adequately as they allowed urine to drip through easily. Participant 6 made the following comments regarding the above issue:

The market is characterised by thin cloth napkins. These are not durable at all as they cannot withstand the regular washing associated with napkins. Remember each cloth napkin will be washed several times and it has to be of high quality to go through that. Furthermore, we expect one cloth nappy to last through two babies. This is no longer the case because of the poor quality napkins that are available on the market. So what is the purpose of sticking to these inconvenient products when you have disposable baby diapers?

The participants felt it was therefore better to migrate to disposable diapers as one diaper could be kept on the baby for long periods unlike cloth diapers. Some of them mentioned that diapers allowed babies to sleep peacefully at night since they absorbed all the moisture. They felt that

disposable baby diapers were more hygienic than cloth diapers which were uncomfortable for babies once they got wet.

It also emerged that disposable diapers were preferred because they were affordable. Some participants revealed that disposable diapers were a welcome innovation as they saved on soap which was required when using the traditional cloth diapers. During the study, it was observed that a disposable diaper cost an equivalent of US\$0.20, whilst a bar of washing soap cost an average of US\$1.30. Naturally, some nursing mothers opted for the disposable diapers which they felt were generally cheaper to use than cloth diapers. Similar observations were made by Moyo (2017), in a study in Bulawayo, where some mothers revealed their preference for disposable diapers. They argued they saved on soap which was a critical requirement when using cloth diapers.

To sum up, it was clear that participants who supported the use of disposable diapers mentioned that diapers were trendy, and the nursing mothers were living in modern times. Most local authorities did not provide a reliable supply of water that was necessary when using cloth napkins. They also added that disposable diapers were convenient. Such sentiments encourage nursing mothers to migrate to the use of disposable baby diapers.

There was however a group of participants who supported the proposed ban of disposable baby diapers. They claimed that they were using disposable diapers because they had limited choices. As mentioned earlier, the production of cloth diapers has gone down because of one reason or another. This group of people supporting the proposed ban argued that although disposable diapers were viewed as convenient for busy women, they had brought about an environmental crisis. They contended that, in the past, diapers were mainly for the well-to-do families. They were considered as a luxury, and the well-to-do families were amongst the few people using them. They mentioned that diapers were used only when travelling, when cloth diapers were inconvenient. They argued that modern mothers preferred to use disposable diapers, yet they have not yet mastered the art of disposing of them. They mentioned that most of the young nursing mothers were reckless as they dumped the soiled diapers at illegal dumpsites. They felt that it was important for nursing mothers to have an understanding of how to deal with soiled diapers before jumping onto the band wagon of using the diapers.

Those in support of the intended ban felt that disposable diapers were unhygienic and unhealthy as babies could be left with a soiled diaper for several hours. They said these young mothers were oblivious of the fact that it was taboo to dispose of human waste in open space. Older women guarded against this practice of disposing of waste in open space, as they felt the human waste could be used for black magic or ritual purposes which could harm the child. They therefore made sure that they concealed baby waste in places only known to themselves. They said they were concerned that modern women were not worried about where they disposed of the human waste. This therefore contributed to the increase in environmental pollution as soiled diapers were disposed all over. They maintained that if nursing mothers paid particular attention to where they disposed of the soiled diapers, then they would not be an environmental nuisance.

Gweru City Council official revealed that the careless disposal of soiled diapers exposed residents to vermin and diarrhoeal diseases as they contaminated the environment. The city council official also mentioned that the environment was made unsightly by the disposed soiled

diapers. The Environmental Management Agency was quite resolute on the ban of diapers. They supported the proposal by government as they felt the disposal of soiled baby diapers was out of control and had become an environmental health time- bomb if left unchecked. EMA mentioned that residents were just careless and unconcerned about the environmental pollution caused by soiled diapers. EMA argued that despite several awareness campaigns it has conducted, users continued to dump soiled baby diapers in open spaces in a negligent manner. For EMA, banning the use of disposable baby diapers was the only feasible option.

Some women who supported the intention to ban the use of disposable baby diapers also argued that women who wanted to use diapers were lazy. They did not want to wash the cloth diapers, hence their desire to use disposable diapers. They argued that from a traditional perspective, washing of cloth diapers helped nursing mothers to bond with their babies. The washing of cloth diapers would also reduce the number of soiled diapers disposed of in the open environment. They added that despite their desire to use disposable diapers, they had not mastered the concept of the proper way of disposing the diapers which have become a threat to the environment. The same perceptions were shared by the academic who wanted disposable baby diapers banned. She argued that young women always jumped onto the easier option without paying attention to their negative effects.

It is important to note that diapers have replaced good practices that used to exist before their coming. This is supported by Katharina (2015), who purports that as soon as infants could sit, they were encouraged to urinate and defecate outside, or into a potty. However, the use of disposable diapers is now delaying infants in their development process as they feel there is nothing wrong in relieving themselves in the disposable diaper. Nursing mothers can delay changing the diaper, thus, making babies wear diapers longer than is necessary. Toilet training is also said to have played a significant role in cementing and strengthening the bond between mothers and their babies. According to Sommer and Sommer (2015), this interactive and caring way of raising children brought a lot of developmental advantages.

The study established that although most of the participants claimed that they were aware of the proper way of handling soiled diapers, evidence on the ground showed that few participants were quite clear on this issue. Some participants said that they rolled the diaper together with faeces and placed these in plastic bags. These were then placed in dustbins and later taken to McFaden dumpsite. During visits to the municipal dumpsite, it was observed that disposable baby diapers constituted quite a significant proportion of solid waste. These were mixed together with other domestic, industrial and hospital waste. The soiled diapers at the dumpsite were a real environmental threat. Faeces and urine in the diaper potentially have contagious pathogens which could find their way into the soil. These could pollute underground water around the dumpsite. Furthermore, waste pickers at the dump site used bare hands to salvage recoverable materials. These people were exposed to the real danger of contracting communicable diseases such cholera, diarrhoea, dysentery and typhoid.

It emerged from study observation that some diapers were blown out of the municipal dumpsite since it did not have a perimeter fence. Dogs were also observed at the dumpsite, and these could carried some of the diapers away from the dumpsite. The dumpsite was located less than twenty metres from some houses in Woodlands Suburb. Fire was used by waste pickers for one reason or another and it ended up burning some diapers at the site. Naturally, diapers do

not burn readily, and they also produce harmful gases such as carbon monoxide from incomplete combustion (Mangizvo, 2014). The smoke produced also contributes greenhouse gases as has already been discussed.

Some of the participants mentioned that although bins were supposed to be collected once a week this was not the case. The city council refuted this claim and argued that it followed the scheduled collection times. Observation made during this study showed that the city council did not always collect waste on a weekly basis. At times the responsible authority failed to collect bins because of refuse collection vehicle breakdowns. In some cases, residents did not have bins to deposit waste. This left residents with the task of dealing with dangerous waste such as disposable diapers. According to some participants, in such situations, nursing mothers either tried to burn diapers or they buried them underground in their yards. The consequences of burning diapers have already been discussed. Burying the soiled diapers has the potential of polluting underground water. Others said they put them in plastic bags, which they threw at illegal dumpsites which have mushroomed in open spaces, drains and on the outskirts of the suburb. This was confirmed in a walk-through in Senga Suburb. Diapers were observed dumped in drains, open spaces and on the margins of the suburb. The dumped soiled diapers were unsightly. A few nursing mothers said they tossed them onto rooftops where they left them to the mercy of the weather elements and birds such as crows. Chances of those diapers falling onto the ground were very high. One respondent to the interviews mentioned that she flushed the soiled diapers down the toilet. Because of their nature, diapers absorb water and clog the pipes. This could lead to sewer blockages and burst pipes. During face-to-face interviews, some of the participants were oblivious of the fact that diapers could cause sewer pipe blockages. Information obtained from the councilor and one senior citizen mentioned that Old Senga experienced numerous sewer pipe bursts. They attributed these to the unsuitable materials such as diapers and pads that were flushed down the toilets. Observations made during a walkthrough in Senga noted three (3) burst sewer pipes caused by diapers.

Those in support of the ban also added that dogs had a tendency of bringing soiled diapers home. This view is supported by Chasokela (2019), who argues that dogs often dragged soiled disposable diapers from the heaps of waste, particularly in high-density areas which had erratic waste collection. This therefore exposed households to unhealthy conditions as well as the spread of diseases. One participant had this to say:

The use of diapers is bringing with it so many problems. Imagine waking up in the morning to find your yard littered with soiled diapers whose origin you do not know. How should I deal with such waste? Old Senga has several stray dogs and cats that wander around the suburb. They have a tendency of tearing the soiled diapers and strewing them all over. This is unsightly.

It was clear that those that supported the ban felt that nursing mothers who used disposable diapers were not able to dispose of them properly. This made them an environmental nuisance.

The desire to use disposal diapers has also witnessed the entry of cheap varieties of disposable baby diapers on the market to meet the needs of lower-class consumers. Observations made during this study revealed that vendors sold poor quality diapers to meet the upsurge in demand. These poor-quality diapers fail to absorb urine, hence they got soaked quickly, forcing nursing mothers and caregivers to use more diapers than those using the genuine varieties. Sentiments

from some participants indicated that the proliferation of Disposal diapers was dominated by counterfeit products. One participant had this to say:

The demand for diapers has opened up avenues for the importation of fake products. The mere desire by nursing mothers to use disposable baby diapers has created opportunities for unscrupulous traders to import fake products into the country. These now dominate the market as they are cheap and affordable. However, the bottom line is that most women are not able to properly dispose of the soiled diapers, making them an environmental health challenge.

The above situation means that more and more diapers are added to the landfill or illegal dumpsites. This obviously creates an environmental nuisance.

5.0 CONCLUSIONS

The study concluded that disposable baby diapers have almost become indispensable to both working mothers and housewives because of their perceived advantages. Disposable diapers are viewed as being convenient as time to wash cloth diapers is not available. Women have to attend to other pressing needs due to the economic hardships being experienced in the country at large. It is trendy to use disposable diapers. However, they have become an environmental menace as well as a health hazard. It is apparent that they are increasingly becoming a major environmental waste component. Some users are not able to dispose of them in an environmentally benign manner.

5.1 Way forward

The study recommends the need to look at several issues that surround the adoption of disposable baby diapers. These include the need to have education and awareness campaigns concerning the use and disposal, as well as the pollution caused by the open dumping of soiled disposable baby diapers. It is also necessary to encourage the use of re-usable cloth diapers and bio-degradable disposable diapers. Manufacturers of disposable baby diapers should ensure that they have instructions on the proper disposal of used baby diapers. There is need for users to practice separation of waste at source, that is, soiled diapers should be separated from the general waste, and should have a specific destination. Both, central and local government should improve the provision of water in urban areas. Local authorities such as urban councils should have by-laws which deal with the disposal of soiled diapers.

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