

RESEARCH ARTICLE

EFFECT OF THE USE OF BABY DIAPERS ON PUBLIC AND ENVIRONMENTAL HEALTH OF DUTSE JIGAWA STATE NIGERIA

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ABSTRACT

Diapers are classified as hazardous waste; improper use and disposal of diapers can have immediate or long-term negative health effects. The study examined the nature of the use of baby diapers among mothers in some areas in Dutse Local Government, Jigawa State. A structured questionnaire was used in three purposely selected areas of Godiya Miyetti, Takur Adua and Gida Dubu where 120 questionnaires were distributed to households purposively. This is to identify the nature of the use of disposable baby diapers and its implications on the environment and health. It was found that over 85% of the respondents use baby diapers on their children. while the used diapers are indiscriminately disposed of in an open dump space. The average household spending on diapers ranges between ₦1000 and above more than ₦2000 per month. The most common diaper health problems are rashes, red skin, swelling, irritation, fungal infection of the genital areas and vaginitis as a result of prolonged use. Disposable baby diapers are popular among mothers as they find comfort in using them and the number is likely to increase with the increasing number of working class mothers in these areas. The study recommends that manufacturers should find ways to produce more environmentally and health-friendly diapers, while mothers should be using these diapers with precaution on their children.

KEYWORDS

diapers, environmental health, disposal, infection, Dutse

1. INTRODUCTION

The recent increase in the use of baby diapers and indiscriminate disposal of the used diapers are becoming rampant in our environment, in most cases prolonged use of diapers on babies are becoming an issue especially, with the increasing number of working-class nursing mothers. As Diapers are being classified as hazardous waste, such waste has immediate or long-term negative health effects (Tembo and Chazireni, 2017). Diapers contain faecal matter and urine and are likely to contain pathogenic microorganisms. Pathogens excreted in human faeces can pose health problems in the long term (Emily et al., 2015). According to WHO, human excreta has been implicated in the transmission of many infectious diseases including cholera, typhoid, hepatitis, polio, cryptosporidiosis, ascariasis, and schistosomiasis (WHO, 2014). Human excreta in disposable diapers contain pathogens, which can lead to different diseases. Against such a background, there is an indication that the challenge of handling diaper waste is going to be greater. Indiscriminate disposal of diapers is posing serious environmental and health problems.

Most people encounter their lives when starting a family: diaper choice - disposable vs. reusable (cloth/fabric), Srivastava and Verma reported a number of women show dissatisfaction with the use of cloth diapers than disposable, while some researchers indicate the reduction in parenting stress in the use of disposable diapers (Srivastava and Verma, 2017; Smith et al., 2013). Many scientists, parents and environmentalists have tackled the cloth versus disposable diaper debate. Several scientific studies have been undertaken (admittedly some are quite biased one way or the other based on the study sponsor), but biases notwithstanding, it is quite clear that both cloth and disposable diapers have environmental effects, such as the consumption of natural resources, energy usage, health issues, air and

water pollution and waste disposal (Oya et al., 2020).

Disposable diapers are a great convenience in the modern world, but many parents question just how safe the materials used in disposable diapers are. Most recently, diaper manufacturers have responded to environmental and health concerns raised by many parents by changing the way they make diapers and what diapers are composed of (Park et al., 2019). Today the question is how mothers use diapers on their baby with urine and defecation on it, regarding their physical and mental health. A group researchers found that infants display less mature giant patterns and more missteps and falls while wearing diapers, thus, infants' diapers constitute an ongoing biomedical perturbation while learning to walk (Whitney et al., 2012). Additionally, infants' diapers have difficulty in bladder control because they urinate and defecate indiscriminately. A group researchers stated that the use of disposable diapers might reduce parenting stress as well as basic needs for low-class citizens (Smith et al., 2013). Many scientist looked at the disposal procedure of used baby diapers, and the studies concluded that most of the used diapers are dumped in the open (Emily et al., 2015; Tembo and Chaziren, 2017).

2. STUDY AREA

Dutse is the Capital of Jigawa State which is 11°42'8.46" latitude and 9°20'2.46" and elevated at about 431 metres above sea level. It was estimated to have a population of 200,000 according to the National Population Commission (NPC) census 2010

3. METHOD

The study focuses on some selected areas of Dutse town in Jigawa state,

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Nigeria. The areas are Godiya Miyetti, Takur Adua and Gida Dubu. Information was collected using a structured Questionnaire which was distributed to households purposively to nursing mothers. The sample was drawn at a 95% confidence level and 9% margin of error using the population size of less than 400,000, the population sample drawn was 119 instead of 97 in the study area. The interview was conducted with health personnel at two hospitals Rasheed Shekoni and Dutse General Hospital. The data analysis was done using descriptive statistics using graphs and simple percentages were used.

4. RESULT AND DISCUSSION

4.1 Demographic Analysis

The summary of the Biodata of the respondents in Table 1 shows that the majority are between the ages of 26- and 40-years old mothers with about 6 to 10 years of marriage experience. Among the respondents, 53% have 1 to 3 children with 31% having 4 to 6 children.

The participants have indicated their number of children using baby diapers concurrently where 23% have at least 2 children using the diaper, 66% use to remove their baby's diaper once spoiled, and only 41% reported replacing the diaper once removed the spoiled one. But for the

nature of changing the diaper in a day either spoiled or just removed, 58 (49%) mothers have indicated replacing the diaper once spoiled. However, only 29 (25%) mothers indicated replacing the diaper immediately

Looking at the nature of the use of baby diapers on baby indicated that some mothers do not change their baby's diaper no matter how saturated it is on their baby. However, mothers indicate comfort in using the diaper on their babies (Table 3). About 66% are comfortable despite identifying some health problems related to the overuse of diapers on their babies and the additional expenses it is adding to the household while 23% indicated that their husbands do not like the use of baby diapers but since mothers are comfortable they are using it.

According to the interview on the diaper-related health implications with some health personnel, it was indicated that a number of illnesses are strongly related to the extensive use of baby diapers or their inappropriate usage. Wiping instead of washing babies after removing the diaper is seriously reported to have effects on the children's skin, such effects are irritation, rashes, red skin and peeling of the outmost layer of the skin on some children. And for the fact that faeces and urine contain numerous microbes/pathogens, it causes infection of the ureteral vulva in girls and other fungal infections of the genital areas and vaginitis.

Table 1: Nature on the Use of Baby Diapers and Health Implication on Babies

Biodata of Respondents	Frequency	Percentage (%)
Age (years)		
Less than 20 years	1	1
21-25	23	19
26-30	35	30
31-40	53	45
40 and above	4	3
Not indicated	2	2
	118	100
Years in Marriage		
1-5	31	26
6 -10	41	35
11-15	22	19
16-20	19	16
21 and above	2	2
Not indicated	2	2
	118	100
No. of Children		
1- 3	63	53
4-6	37	31
7-9	10	8
10 and above	8	7
Not indicated	0	0
	118	100

Table 2: Nature on the use of Baby diaper

Diaper Usage	Frequency	Percentage (%)
No. of Children Using Diaper		
1	81	69
2	27	23
3	4	3
Not indicated	6	5
	118	100
Nature of removing Baby Diaper		
Once spoiled	78	66
On free time	24	20
On timely	16	14
Not indicated	0	0
	118	100
Daily Nature of Changing Baby Diaper		
Once a day	37	31
Twice a day	22	19
Once spoiled	58	49
Not indicated	1	1
	118	100
Nature of Replacing Baby Diaper		
Immediately	29	25
Not immediately	41	35
Sometimes	48	41
Not indicated	0	0
	118	100

Table 3: Health and socio-economic issues on the use of disposable diaper

Physical/Social Discomfort	Frequency	Percentage
Yes	39	33
No	78	66
Not indicated	1	1
	118	100
Health problem		
Rashes	64	54
Swelling	9	8
Itching	11	9
Other	4	3
Not indicated	31	26
	118	100
Awareness by the Doctors on Nursing Mothers		
Yes	16	14
No	102	86
Not indicated	0	0
	118	100
Amount Spent per Month On Diaper		
Less than 1000	15	13
1000-1999	57	48
2000 and above	46	39
	118	100
Husband's Likeness on the Use of Diaper		
Yes	53	45
No	27	23
I don't know	36	31
Not indicate	2	2
	118	100
How do you Feel Going out Without Baby Diaper		
Comfortable	6	5
Uncomfortable	91	77
Ashamed	20	17
Others	0	0
Not indicated	1	1
	118	100

4.2 Waste Disposal Attitude and the Environment

The majority of the respondents (90%) dispose of used diapers in a dustbin, and only 5% of the respondents are disposing it separately. For the period of disposal, 66% are disposed of while 7% show that it depends on the season respondents indicated that Almajiri (housekeepers) are

mostly (76%) disposing of their waste (Table 4). Indiscriminately used diaper disposal is the common practice in the study area mostly in an open place where Almajiri used to dump unsegregated this harm environmental hygiene and sanitation that is similar or same with open defecation. Some researchers said that most of the disposable baby diapers are disposed in an open space (Emily et al., 2015).

Table 4: Disposal Attitude

Disposal Attitude	Frequency	Percentage (%)
Method of Disposal		
Dust bin	106	90
Pit latrine	4	3.3
Flushing	2	1.7
Dispose separately	6	5
Not indicated	0	0
	118	100
Period of Disposal		
Everyday	78	66
Weekly	32	28
Monthly	0	0
Depends on season	8	7
	118	100
Who disposes the waste		
Almajiri	90	76
House kids	20	17
Waste collectors	7	6
Not indicated	1	1
	118	100

5. CONCLUSION

This study indicates the need for sensitisation on the use of baby diapers aimed at demonstrating the likely associated human and environmental problems as a result of excessive use of disposable baby diapers. Manufacturers of these products should consider human and environmental issues. Disposable baby diapers are popular among mothers and are used excessively because they find comfort in using them. The problem of disposable diapers is likely to increase due to population growth and an increase in working-class mothers. The majority of these used diapers were disposed in open spaces which are proven to be harmful to humans and the environment.

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