

Cultural Aspects of Disposable Diaper Waste and Sanitary Napkins in Indonesia

Aspek Budaya pada Pengolahan Sampah Popok Sekali Pakai dan Pembalut Wanita di Indonesia

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Abstract

The cultural aspect of managing disposable diapers and sanitary napkins in Indonesia is very important. The purpose of this study was to obtain an overview of the cultural aspects of the waste management process. The method used literature review. The data analysis used thematic analysis. The articles obtained from the selection were 18 titles. The results of the review show that the culture that is most discussed in the issue of disposable diaper and sanitary napkin waste management is the culture of industrial society, then Javanese society and the last one is colonial. Culture is discussed in the realm of practice and reasons for use as well as practices and reasons for waste management. Things that need to be deepened are culture in the form of (1) cultural engineering and cultural environment and (2) the realm of the impact of using and managing disposable diapers and sanitary napkins. Another suggestion is to expand database searches and perform SLRs /*Systematic Literature Review* for more detailed results.

Keywords: culture, waste management, disposable diapers, sanitary napkins

Abstrak

Aspek budaya dalam pengelolaan sampah popok sekali pakai dan pembalut di Indonesia sangat penting. Tujuan studi ini untuk mendapatkan gambaran tentang aspek budaya dalam proses pengelolaan sampah tersebut. Metode yang digunakan adalah review literatur. Analisis data yang digunakan adalah analisis tematik. Artikel yang diperoleh dari hasil seleksi adalah 18 judul. Hasil review memperlihatkan bahwa budaya yang paling banyak dibahas dalam masalah pengelolaan sampah popok sekali pakai dan pembalut wanita adalah kebudayaan masyarakat industri, kemudian masyarakat Jawa dan yang terakhir adalah kolonial. Budaya dibahas dalam ranah praktik dan alasan penggunaan serta praktik dan alasan pengelolaan sampah. Hal yang perlu diperdalam adalah budaya dalam bentuk (1) cultural engineering dan cultural environment dan (2) ranah dampak penggunaan dan pengelolaan sampah popok sekali pakai dan pembalut wanita. Saran lainnya adalah memperluas pencarian database dan melakukan SLR/Systematic Literature Review untuk mendapatkan hasil yang lebih mendetil.

Kata kunci: budaya, pengelolaan sampah, popok sekali pakai, pembalut wanita

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Introduction

The most massive environmental pollution occurs in the form of microplastics (Horton & Barnes 2020). Microplastic is an element of plastic that is very often used by humans. The recycling process takes a long time and costs a lot (Reimonn et al. 2019). This element is very dangerous for human health. Cancer, skin diseases, infertility, and obesity are diseases caused by microplastics (Sharma & Chatterjee 2017).

Microplastics are also found in disposable diapers and sanitary napkins (Sachidhanandham & Priyanka 2020; Siddiqe 2019). Disposable diapers are a substitute for pants that can accommodate the urine of small children and adults. Pads are plastic containers to hold fluid *menarche* women. Data from the last five years shows that disposable diaper waste and sanitary napkins are at the top of the list that pollutes the environment in Indonesia (BPS 2020; Cipta Karya 2011; Ramadan & Sembiring 2020). For example, in West Java and East Java, disposable diapers and sanitary napkins occupy the highest levels of waste that pollute the environment, especially rivers (Hakim, 2017; *Baby Diaper Waste Reaches 2.4 Million Per Day*, Khofifah, 2019). *The class action* has also been carried out by the community to the city and provincial governments as a form of protest against this situation (Petrus 2017). However, until now the realization of the protest has not been seen. Thus, the danger of microplastic elements is very large, disturbing the health of the residents of the area.

Scientific studies and concrete efforts have been made to overcome the contamination of disposable diapers that occur in Indonesia. These activities are still more focused on discussing the rapid and safe decomposition of microplastic material (Suryati 2014), studies on policies prohibiting the disposal of disposable diapers (Maesarini et al. 2020) and sanitary napkins, and the process of raising awareness to use non-plastic products (Noriko 2013). However, this has not been able to reduce the waste of disposable diapers and sanitary napkins both in the water and on land. Several researchers and activists state that a comprehensive effort is needed to overcome this problem (Indrawati 2011; Mahyudin 2017). One thing that is important to note so that all these efforts are comprehensive is culture. Culture has a relationship with the management of plastic waste, household waste, and environmental preservation in general (Mahyudin 2017; Utami et al. 2008).

Culture is a system of habits in human life. Koentjaraningrat (1990) defines culture as the whole system of ideas, actions, and human works in the context of community life which is made into the human property by learning. Research on cultural aspects related to waste management of disposable diapers and sanitary napkins is extensive with various location settings and various discussions. The author feels it is important to see an overview of the cultural aspects of waste management for disposable diapers and sanitary napkins, to find the right discussion to improve the waste reduction efforts in Indonesia.

Methods

The method used in this study is a literature review. The articles used have the following characteristics: (1) journal articles, conference articles, and *gray publications*; (2) contains cultural aspects related to the processing of disposable diapers and sanitary napkins in Indonesia; (3) is in the range of 2010 – 2021; (4) English and Indonesian. Scientific literature was obtained through

the Google Scholar, SINTA, and Scopus databases. Data analysis in this article used thematic analysis, which the analysis is done by grouping them on specific themes.

Results and Discussion

Profile of Selected Articles

The articles found according to the keywords used were 400 articles. After adjusting to the objectives and characteristics of the articles needed, 18 articles were obtained. Table 1 below shows the profiles of the 18 articles. The articles found have the following description (a) 4 articles published in SINTA 3 and 4 accredited national journals, (b) 8 articles published in unaccredited national journals, (c) 2 articles published in international journals with a Scopus Q1 rating, (d) 1 journal published in international conferences, (e) 1 journal published in national conferences and (f) 2 articles with *gray publications in the form of thesis*.

Cultural Aspects

In table 1, it can be seen that the cultural aspects related to the processing of disposable diapers and sanitary napkins can be divided into several categories. The first category is knowledge, understanding, values related to religion and certain ethnic traditions, perceptions, meanings, awareness, internalization of values, legal ideas, cultural conflicts related to colonial and Javanese culture, industrial community culture, myths, and *beliefs*. The most talked-about ideas and ideas are related to industrial culture. The value of the emerging industrial culture is practicality in using and managing waste. The second category includes habits, behaviors. In this paper, the second category includes habits and behaviors related to social and community systems, religious systems, and the dissemination of new habits. The third category includes visible forms such as new disposable diapers, sanitary napkin replacement products, disposable diaper waste treatment programs, and sanitary napkins with the latest approach.

The above category is seen in the form of culture proposed by Honigmann (1959). Cultural forms can be divided into three types, namely (a) cultural forms as a complex of ideas, values, norms, and rules; (b) the form of culture as a complex of activities and patterned actions of humans in society and (c) the form of culture as objects made by humans.

The first form is abstract, contained in the cognitive process and the elements that are in it are interrelated. This first form is often known as the *cultural system*. Themes included in this category, namely knowledge, traditional values, myths, *beliefs*, value conflicts have also received the same attention as studies from several Asian countries, especially India. The study focuses on knowledge and values formed by the influence of mass media (Salhi & Emamgholi 2020), the myths and *beliefs* discussed by (Bhor & Pankshe 2018; Chanana 2016), and value conflicts are also discussed in the context of Indian society where conflicts exist. cultural values between religious values and industrial values in the use and processing of disposable diapers and sanitary napkins (Chanana 2016; Davidson 2012). Industrial culture and practical values that emerge from this culture become the research context in almost all research related to this type of waste. This research that reveals directly about modern culture was carried out by Chanana (2016) and Ntekepe et al. (2020).

The second form is more concrete, seen in the pattern of community interaction. This second form is often known as the *social system*. The themes that fall into this category are behavior, dissemination of behavior, and social systems. The social system is also an important study by researchers from other countries outside Indonesia. Research on social systems related to the use and processing of disposable diapers and sanitary napkins was conducted by Villalba et al. (2020). They study the role of socio-demographic, institutional, emerging temporal, and cultural aspects in the use of single-use items and the management of waste from these items. Then, Chanana (2016) has a study that looks at the myths and socio-economics of women who use disposable diapers as well as sanitary napkins. The two studies represent the second cultural category, which also appears in research conducted by Indonesian researchers.

The third form is very concrete because it is a manifestation of the interaction of the first and second forms, namely the result of culture. Cultural outcomes are closely related to technology and creativity. In the Indonesian research reviewed in this paper, the themes on technology raised include (1) the use of cloth diapers/menarche pants as a substitute for disposable diapers and sanitary napkins, (2) legal policies/PERDA, (3) recycling waste processing by using chemical elements and, (4) the role of individuals, generations, and communities in waste management. In research outside Indonesia, this is also very often studied. These studies often incorporate emerging technologies and policies. As research conducted by Cordella, et al. (2015). They conducted a study on the evaluation of recycling processes involving the above four in Latin America.

Table 1. Profile of 18 articles related to the processing of disposable diapers

No.	Name of Author	Article Title	Year	Type of Publication	Cultural Aspects
1	Habsari, Ghaniyu Putri	Role of Pondok Social Environmental Officer (Liposos) in Managing Diapres on Clients in Uptd. Pondok Social Environment (Liposos) Jember Regency Unaccredited	2021	Journal	Knowledge and clean habits of environmental officer figures
2	Agus Saefudin, Henita Rahmayanti, Diana Vivanti Sigit, and Agung Purwanto	Household waste management perspectives in Indonesia: A case study of polymer plastics packaging waste in Kampong Melayu, East Jakarta	2021	International Conference	Industrial culture, the role of manufacturers of disposable diapers and sanitary napkins in waste management.
3	Diniah, Bibit Nasrokhatusun	The relationship between the level of knowledge and policies on waste management of disposable diapers and the amount of waste generated in children under 3 years (BATITA) Unaccredited	2020	journal	Mother's knowledge, mother's role, education and status of working mothers
4	Aprilyantini, Puasini, Sari, Ratna Puspita	The Suleten Myth, The Habit of Throwing Diapers into the River and Awareness Efforts for Riverside Communities in Rungkut and Gunung Anyar Districts, Surabaya	2020	Journal not yet accredited	Myth, belief, behavior strengthening, social and cultural structure
5	Arisandi, April, Farid, Akhmad., Muskaromah, Siti.	Management of Plastic Waste Contaminating the Tonjung River Irrigation Channel Bangkalan Madura Regency	2020	SINTA accredited journal 4	Clean knowledge, Madurese
6	Adelia Paramita	Community portrait at risk: Housewives' habits in disposing of waste in Krajan Tempurejo Hamlet	2020	Thesis (<i>gray publication</i>)	Cultural internalization, meaning different, culture imitates others.

Continue: **Table 1. Profile of 18 articles related to the processing of disposable diapers**

No.	Name of Author	Article Title	Year	Type of Publication	Cultural Aspects
7	Utami, Inggita., Putri, Diah Asta	Empowerment of 'Aisyiyah members of the Special Region of Yogyakarta in Management of Used Diapers as Planting Media Mix	2019	SINTA accredited journal 4	Culture related to religion, clean habits related to religion
8	Marthaliakirana, Angsoka Dwipayana	Education For Sustainability Development (EDS) Through Community Understanding to Reduce Disposable Diaper Waste with Reuse Diapers	2018	Journal with SINTA accreditation 4	Dissemination of new habits in certain ethnic groups
9	Widiatningrum, Talitha., Rukan, Krispinus., Susanti, R., Sukaesih, Sri.	Utilization of Disposable Diaper Waste as a Means of Environmental Care for Early Childhood Character Education	2018	SINTA accredited journal 3	Coastal community culture, discipline and education values
10	Dewi, I Gusti Agung Ayu Yuliartika	The Role of the Millennial Generation in Plastic Waste Management in Penatih Dangin Puri Village, East Denpasar District Denpasar City	2018	Journal has not been accredited	Millennial generation culture. The role of the millennial generation and knowledge
11	Lita, Ns.	Overview of the Use of Disposable Diapers in Preschool Age Children Unaccredited	2017	Journal	Industrial culture and habits of mothers in industrial society

Continue: **Table 1. Profile of 18 articles related to the processing of disposable diapers**

No.	Name of Author	Article Title	Year	Type of Publication	Cultural Aspects
12	Sisworini, Purwaning Rahayu	Implementation of Article 29 Paragraph (1) Letter E Law Number 18 of 2008 concerning Management of Number 18 of 2008 concerning Waste Management Related to Community Legal Awareness in Disposing of Waste	2017	Journal has not been accredited	Access to information and culture, legal culture, myths and beliefs
13	Rahayu, Yuyu	Visual Communication Design Campaign Using Cloth Diapers as an Environmentally Friendly Diaper Solution	2016	Thesis (<i>gray publication</i>)	Industrial transition culture in rural areas, mother and child communication system
14	Moelyaningrum, Anita Dewi	Mother's Perception of Disposable Baby Diaper Garbage and its Management	2015	Proceeding article of the National Conference	Belief, Mother's Perception, industrial society habits with practical values
15	Yeny Dhokhikah, Yulinah Trihadiningrum, Sony Sunaryo	Community participation in solid waste reduction in household in Surabaya, Indonesia	2015	International Journal Q1	Industrial culture, cementing new habits with the role of mass media

Continue: Table 1. Profile of 18 articles related to the processing of disposable diapers

16	Engel, Susan & Susilo, Anggun	Shaming and sanitation in Indonesia: A return to colonial public health practices?	2014	International Journal Q1	Conflict between Javanese and colonial culture in sanitation programs and waste processing of disposable diapers and sanitary napkins, the value of shame and the value of punishment
17	Lestari, Praise The	relationship between mother's level of knowledge about toilet training and mother's practice in using diapers in toddler age children (1-3 years) in Putat, Purwodadi	2013	Unaccredited journal	Belief mother and mother attitude
18.	Wardi, Nyoman I	Socio-cultural based waste management: efforts to overcome environmental problems in Bali	2011	National journal not yet accredited	Awareness, principle of " <i>tri hita karana</i> ", dissemination of new habits

The first category to the third category needs to be considered as an inseparable unit. This is aimed at getting a comprehensive understanding and resolution of the problem of disposable diapers and sanitary napkins (Hendra 2016). The trend of research outside Indonesia in the last period has led to research that makes the three categories of cultural manifestations above the main focus. Several studies over the last 10 years outside Indonesia have begun toon *focus cultural engineering* and the *cultural environment*. Research on *cultural engineering* is research that includes the overall study, analysis, and implementation of cultural ecosystems, namely social, political, physical, technical, economic, and financial aspects. This study has been carried out by Davidson (2012), Lahiri-Dutt (2015). Research on the *cultural environment* is research that focuses on the culture of the local environment (eg riverbanks, housing). *This cultural environment* is carried out with the argument that currently people living in one area have mixed cultures so that directly or indirectly they create a new cultural system. This research has been conducted by Salhi & Emamgholi (2020).

The Indonesian research used in this paper has begun to lead to this discussion but is not the main focus. Further Indonesian research can reproduce these studies in further research.

Cultural Aspects and Discussion of Waste Management

In table 1 it can be seen that the discussion of waste management of disposable diapers and sanitary napkins starts with (1) the use of disposable diapers and sanitary napkins and then continues with (2) the process of managing the waste. The discussion on the use of disposable diapers and sanitary napkins includes the reasons for use, frequency of use, and the impact of using these two products. The discussion of waste management includes waste management practices, the reasons for doing these practices, and the impact of these practices.



Charts 1 and Chart 2 show that cultural aspects are very strong in the overall discussion on the use and management of disposable diapers and sanitary napkins. The first form of culture can be seen in the reasons for use, the reasons for managing the waste of disposable diapers, and sanitary napkins. The linkage of the first, second, and third forms of culture is very visible in usage practices, as well as waste management practices. The form of culture has not been seen much in the impact of waste management. The discussion about the impact has not focused on culture, it is

still on physical health issues. The discussion about the impact in the cultural context needs to be deepened to find ways to reduce the waste of disposable diapers and sanitary napkins following the context of people's lives. Waste management is strongly influenced by the social and cultural character of the community compared to the socio-economic character (Puspitawati & Rahdriawan 2012).

Waste management of disposable diapers and sanitary napkins in research outside Indonesia also leads to the practices, reasons, and impacts of waste management. The first research study related to these three things, accompanied by a study involving manufacturers of disposable diapers and sanitary napkins. Davidson (2012) and Lahiri-Dutt (2015) conducted studies on producers as well as policymakers related to the economy, politics, and the physical environment. The second study focuses on the Corporate Social Responsibility (CSR) program in managing waste. Dutta et al. (2012) conducted a study to see the implications of environmental management theory on the success of CSR. This study covers all aspects involved in the implementation of CRS, including the cultural aspect. The third study focuses on social practice. This social practice was investigated by Saktapolrak (2014). This research explores social and cultural practices as a means to re-invigorate research and concern about the environment based on community and culture. What is highlighted is environmental management and the impact of that management.

Research outside Indonesia on the impact of waste management in general and in particular the waste of disposable diapers and sanitary napkins in particular is directed at the impact on physical health and the physical environment (Reimonn et al. 2019; Prata et al. 2019). Research on the impact is directed at the results of the 3 R (Reduce, Reuse, Recycling). The topic that arises when talking about 3R results is competitiveness and I sell these 3R products.

Based on the above discussion, research in Indonesia and outside Indonesia has not focused on the impact of waste management on disposable diapers and sanitary napkins. The management process has been reviewed and carried out to the level of doing recycling. This recycling process has included cultural elements such as research conducted by Utami & Putri (2019) and Widiarti (2012). However, the results of this recycling process have not received more attention. This needs to be considered as an effort to get maximum results in the waste management process which is difficult to describe.

Scope of Discussion and Research Location

The scope of discussion with the theme of managing disposable diapers and sanitary napkins in the last 10 years in Indonesia is not much. Articles with this theme are mostly published in accredited and unaccredited national journals. Only three articles have been published in international journals and international proceedings. The rest are articles that are included in the *gray publication* in the form of a thesis. The article is not specifically about disposable diapers and sanitary napkins. This theme is often combined with the theme of environmental sanitation.

Articles with the theme of environmental sanitation are very rare that separate the discussion of disposable diapers and sanitary napkins from other plastic waste. Although it belongs to the category of plastic waste that is difficult to decompose and contains microplastics, the liquid content of human waste in it makes disposable diapers and sanitary napkins waste that needs special attention (Prasetyaningrum et al. 2017).

The research locations that are mostly studied are the island of Java, especially West Java and East Java. This can be due to the level of contamination of disposable diapers and sanitary napkins. highest among other regions in Indonesia (BPS 2020). The location of this research needs to be expanded so that the complete portrait of waste management can be well described. This is important to support efforts to reduce the waste of disposable diapers and sanitary napkins as a whole.

Limitations of the Research

The limitation of this research is in the expansion of the search for the article database and a detailed review of articles with the theme of environmental sanitation, plastic waste management. The author only conducted a thematic analysis on articles that directly wrote about the waste of disposable diapers and sanitary napkins. For further research, it is hoped that the SLR process will be able to obtain more detailed data.

Conclusion

The cultural aspects discussed in the article on the topic of waste management of disposable diapers and sanitary napkins in Indonesia for the last 10 years are quite complete. The cultural forms discussed include ideas and ideas, social systems, and human products. The culture that is most widely discussed is the culture of industrial society, then Javanese society, and the last is colonial. The cultural form of ideas and ideas is the most studied thing in the form of knowledge, perception, meaning, myth, and belief. The social system is discussed in the scope of dissemination of new habits due to the new product of disposable diapers and sanitary napkins. Suggestions for further research discuss (1) culture related to *cultural engineering*, *cultural environment* and the impact of waste management practices, (2) expand the article search database, and (3) use the SLR method to obtain more detailed review results.

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