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VIEWS AND PERCEPTIONS OF UNIVERSITY STUDENTS ON LITTERING IN GUYANA – A THEMATIC ANALYSIS

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ABSTRACT

Littering is regarded as a major environmental issue and although campaigns have targeted children in school, there is little evidence that adult littering is being addressed. This study investigates the views and perceptions on littering from students at the University of Guyana, who represent the young adult population. This phenomenological qualitative study gathered data through in-depth focus group discussions with twelve participants. Results were analysed using thematic analysis which elicited core concepts that were highlighted from the data gathered. A combination of semantic and descriptive coding was used to create the themes and sub-themes of the study. Following data analysis, six themes emerged. These were titled: "Knowledge of littering," "Feelings regarding littering," "Awareness of consequences of littering," "Persistence of littering," "Knowledge of Guyana's littering laws," and "Methods to reduce littering." Students' responses indicate that littering is a health hazard, a societal habit; harmful to the economy and requires more awareness and steeper law enforcement to effect meaningful and lasting behavioural change in adults. There are numerous ways to combat this scourge in a sustainable manner, including education via print and broadcast media, stricter enforcement of the law, and having enough receptacles at key locations.

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INTRODUCTION

Littering is a major problem worldwide. It is a significant environmental issue that has prompted over 40 years of systematic behavioural research (Schultz et al., 2011). Littering is a phenomenon that has been creating havoc globally with more profound effects in developing countries. Littering and illegal dumping in drains and parapets are widespread practices that affect public health. Litter may block drains and kokers leading to flooding and ideal breeding conditions for vectors that transmit malaria, dengue fever, lymphatic filariasis, and leishmaniasis, all of which are endemic to Guyana. Pollution of water bodies from toxic compounds in waste has become a norm in certain parts of the world (MLGRD, 2013). Guyana is quickly becoming a waste dump. The national solid waste generation rate is estimated to be 0.59 kg/person-day, which is expected to rise to 0.77 kg/person-day by 2024 as Guyana's economy grows (MLGRD, 2013). In 2010, in one of the largest regions, Region 4, the combined household and commercial waste generation was estimated to be 0.73 kg/person per day (Hydroplan, CEMCO Inc, 2010).

Phillip (2019) mentioned that Guyana's coastal regions are the areas mostly affected, where the highest concentration of litter, which included plastic bags and bottles, was discovered to be 48.2%. Littering is a persistent problem that costs the government significant expenses. According to the Guyana Chronicle (2014), cleaning up litter costs millions of dollars, way more than the cost of proper trash disposal, with costs totaling one billion dollars per year. Although littering has detrimental consequences, Guyanese are still littering the environment, as stated by Hughes (2013). Several organisations and clean-up campaigns have worked tirelessly to address these issues, such as increasing the frequency of waste collection or organising clean-up campaigns. Many efforts, however, continue to be ineffective and unsustainable. Although Guyana has a littering law which states that "any person found guilty of any of these offenses shall be fined a sum ranging from \$50, 000 to \$100,000 (about USD 250-500) or face imprisonment for three months", the law is not strictly enforced, according to the Environmental Protection Agency. People maintain unsanitary environments and are not punished (Amankwah-Poku, 2020). Such behaviours persist and worsen in Guyana. It is important to comprehend why people continue to trash

their surroundings and what motivates them to do so to effectively tackle the littering epidemic. Although there may be littering campaigns in schools, there is no comprehensive campaign to address adult littering. It is, therefore, necessary to study adult littering behaviour to develop successful anti-littering campaigns to target this section of the population. A study of this nature is critical to change adult littering behaviour, to develop stronger government intervention programs and provide recommendations for future anti-littering efforts. We thought that university students are a good representation of the young adult population. As a result, focus group discussions were conducted to investigate individuals' views on littering. The aim was to explore why people litter and how littering can be reduced. In Guyana, there is no published literature or national initiatives that address littering and therefore a study of this nature is much desired.

METHODS

Participant Recruitment and Setting: A combination of snowball and purposive sampling was used to invite students to participate in the study. The participants identified were then called via phone. A total of twelve (12) participants were enlisted, and the focus group discussions were conducted in June 2022, through Zoom. Each participant agreed to be recorded for transcription purposes. A Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist was used to create a framework for this study (Tong, 2007).

Data Collection: The data was gathered through in-depth focus group discussions with 12 participants. A pilot test prior to the focus group discussion was done to develop an interview guide, to aid in the easy flow of the questions and allow for clarification if necessary (Alodail, 2016). Verbal consent and participant demographics were collected before the commencement of the focus group discussion. Participants were assured of their privacy and confidentiality, as well as their freedom to withdraw at any moment from the study.

rationale behind the specific structuring of the questions (Yulianto and Mujtahin, 2021). Table 1 outlines the scientific rigours of this study and how it was attained.

Data Analysis: The results were analysed using thematic analysis. The recorded discussions were, verbatim, transcribed using a voice transcription app called Descript. Following that, the transcripts were read and re-read to identify and analyse emerging patterns. To ensure inter-coder reliability, a co-author participated in reviewing the transcripts and cross-checking them with the recorded content. This validation process was repeated. The coding process was exclusively conducted by the principal author. The primary author conducted a thorough examination of the text to pinpoint overarching themes, followed by the inductive identification of sub-themes. This inductive process relied solely on the evidence present within the transcript to support the emergence of themes. The researchers used a combination of semantic and descriptive coding. The word frequency was obtained, and the most common key terms were identified prior to the application of the descriptive coding. Themes were identified and noted by the group members separately and the themes identified were later compared for similarity before definite decisions were made. The remaining transcripts were examined, each of which confirmed the findings of the other. Deviance checks were performed to uncover any data limitations, ensuring that no unsupported assumptions were made (Estrellan *et al.*, 2021). Notably, no deviant data was found. The transcripts were shared with participants for validation. To safeguard participant confidentiality, unique identifiers were used in the data coding process. Data analysis was done using Microsoft Word and Excel.

RESULTS

Following data analysis, six key themes emerged and about three subthemes became apparent for each of the key themes (see Table 2).

Table 1. Outline of Scientific Rigours Applied to the Study

Criteria	Strategies
Accountability	Students received a brief introduction before the interviews. An in-depth focus group discussion of about 1-2 hours was conducted. The interview was recorded and transcribed on the same day by the interviewer.
Dependability	The study was meticulously developed, involving a systematic review of existing literature. Identical interview questions were used and a thorough transcript review was conducted to rectify any errors. The data was manually coded and verified thrice.
Confirmability	Data triangulation was achieved by utilising the data collection tool, and subsequent verification was performed by co-authors.
Transferability	The research process employed purposive and snowball sampling techniques. In-depth focus group discussions continued until data saturation was reached.

Table 2. Themes and Subthemes Derived after the Final Coding of the Data

Main Themes	Sub Themes
1.0 Knowledge of littering	1.1 Improper/Illegal Disposal of Any Material 1.2 Intentional Actions 1.3 Environmental Contamination
2.0 Feelings Regarding Littering	2.1 Disgust/Disappointment 2.2 Public Nuisance 2.3 Need for Action
3.0 Awareness of Consequences of Littering	3.1 Pollution and Diseases 3.2 Harm Animals/Wildlife 3.3 Economic Distress
4.0 Persistence of littering	4.1 Lack of Garbage Receptacles 4.2 Littering as a Habit. 4.3 Measures of Punishment 4.4 Common Littering Materials
5.0 Knowledge of Guyana's Littering Laws	5.1 Awareness of Penalties and Laws for Littering in Guyana 5.2 Lack of Enforcement 5.3 Disregard for the Laws
6.0 Methods to Reduce Littering	6.1 Provision of More Bins/Receptacles 6.2 Strict Enforcement of Laws and a Greater Severity of Punishment 6.3 Education and Awareness Campaigns

Signed consented forms were collected prior to the focus group discussion. To allow participants to develop their responses, open-ended questions were used, and they were not interrupted during their discussions. Data saturation was explained to participants to help them comprehend the significance of achieving saturation and the

Knowledge of 'What is Littering'

Improper/Illegal Disposal of Any Material: Participants had a basic understanding of what littering implies. Most of them refer to it as an improper or illegal disposal of waste. Participants stated:

E "Umm I would say littering is the improper disposal of your waste products that can lead to a buildup and an untidy environment".

Intentional Actions: This subtheme was mentioned by a few of the participants when asked about their thoughts on defining littering.

F "I would define littering as the intentional action, which involves the disposal of anything that is considered as garbage in the environment where it is an illegal process".

Environmental Contamination: This subtheme describes how littering is linked to the environment, as well as the impact of littering on the environment.

D "I would define littering as leaving illegal substances in the environment."

Feelings regarding Littering

Disgust/Disappointment: Many participants describe feeling disgusted or disappointed when they see people's litter or litter piles.

C "I feel very disgusted by it especially, when it has a very unpleasant scent it really annoys me and oh umm also when it is in a public umm place and then you have to walk or walk through it or something of the sort".

Public Nuisance: This subtheme emphasises that participants attempted to stop the act of littering but were unsuccessful.

L: I saw people littering and it makes me really upset and when you tell them like to pick up the garbage or not the litter they would turn and curse you or tell you that it's none of your business. I don't really like it, but then people still do it.

Need for Action: Participants agreed that littering requires prompt attention.

H: "I feel as though it all of us responsibility to do it right. So, if I see this person littering, it's my responsibility to tell them it's wrong but at the end of the day you really can't force anybody to do anything. You have to get stricter measures in place".

Consequences of Littering

Pollution and Diseases: This subtheme discusses the effects of littering on humans and the environment. Many participants believed that littering causes pollution, which has a negative impact on people's lives. Littering, according to participants, can create breeding grounds for several diseases.

I "Yea, well the consequences that we face are when the rain falls in Georgetown umm it floods, in smaller villages you'll have umm you know breathing of mosquitoes. Not just in small villages but in certain places where you find empty cans and bottles of the mosquito breed which can cause dengue, of course, malaria. These are some of the consequences I know about that can happen. Flooding, the breathing of mosquitoes which can cause certain diseases causing people to get ill".

Harm Animals/Wildlife: Littering not only affects humans, but it can also affect animals and even entrap them and eventually kill them. Many participants stated that:

A "And then you also have littering when it gets into the ocean you have the issue of the microplastics which would get into the fish, and they would end up consuming it".

Economic Distress: In this sub-theme, the majority of the participants give key emphasis on how littering can hinder tourism and it can cause businesses and the health sector to be affected. The narrative is illustrated below:

H "Investors know thinking about these businesspeople abroad say Guyana is a polluted country they ain't going to want to come and invest in Guyana, throw up a business because of that so Guyana will be missing out a lot on foreign investors."

Persistence of Littering

Lack of Garbage Receptacles: Participants believed that a lack of garbage cans was one of the reasons people littered with their environment. Participants speculated that litter leads to more litter. When a bin is full, people are more likely to dump their trash nearby or elsewhere.

A "There is also the issue that they don't have a lot of garbage bins throughout Guyana usually garbage bins are only found umm around specific building or within specific compounds like for instance a government compound or even a private companies compound garbage bins are not I don't think there is enough garbage bins and the garbage, garbage bins that are found around the cities, they are too small and they get fill too quickly".

Littering as a Habit: Some participants stress that people are careless and that their habits are a way of explaining why people litter. They believed that if they littered, there would be someone to take care of their mess. This factor is influenced by one's upbringing and culture. According to the participants,

F "They lack knowledge, some of them are lack of knowledge some of them intentionally do it and we just needed more umm awareness campaign".

Measures of Punishment: Participants believed there are laws in Guyana, which are not properly enforced.

A "Lack of enforcement of laws nobody gets is honestly I've never heard of somebody being punished for littering."

Common Littering Materials: The most common types of litter, according to most participants, are plastic bags and plastic bottles.

E "Umm I agree with plastic products such as water bottle, soda bottle and plastic bags".

Knowledge of Guyana's Littering Laws

Awareness of Penalties and Laws of Littering in Guyana: Some of the participants were aware of the littering laws, but the majority were unaware of littering fines and penalties. According to participants:

D "I am aware of the law, but I am not sure what the fines are, and I don't think it is probably enforced and I think the government or whoever in charge really need to work on that".

Lack of Enforcement: Most of the participants stated that people litter in Guyana because of the poor enforcement of the law.

A "Lack of enforcement of laws nobody gets, honestly I've never heard of somebody being punished for littering".

Disregard for the Law: This subtheme demonstrates that people are simply being careless and do not care about the law, and participants stated that the main reason people feel this way is that the laws are not properly enforced.

B "I think Guyanese people continue to litter because umm the law is there and the government, they don't amend the law in a strict manner so, so people just do whatever they want just throw garbage anywhere and feel if the right thing to do."

Ways to Reduce Littering

Provision of More Bins: Participants believed increasing the number of bins in the strategic areas is one way to curb littering. Participants stated:

L “Also they should place more bins in the busy area since people litter. I’m saying that they litter because they don’t have enough umm bins available”.

Strict Enforcement of Laws and More Severe Punishment: Participants emphasised the importance of making the law and punishment more severe, so that people fear the law and learn to do the right thing, which is to dispose of their garbage in the appropriate places. Additionally, those in authority ought to enforce strong penalties and make sure that those in charge of this responsibility are held accountable. These are some of the strategies that can be used to reduce littering.

L “I think that Guyana should enforce stricter laws where the penalty should be more severe so that the people would take it serious”.

Education and Campaigns: Some participants believe that more clean-up campaigns and education would influence littering behaviour. They proposed that if people are well informed about the effects and consequences of littering, it may be possible to change their behaviour.

J “Well I think the Government, Mayor and City Council along with the waste management disposal body they can have like outreaches in schools, communities, and organisation to teach people and enlighten them about the effects of waste and how it destroys its country, the community around you and maybe that can reduce it”.

DISCUSSION

Littering is an issue of great concern, and its importance cannot be overstated. Results from this study showed that participants had a substantial understating of littering. Participants’ understanding of what constitutes littering was given as “any improper or illegal disposal of material.” Participants stated that littering in Guyana is not considered a serious crime, so people do not see the need to avoid it. This finding implies that simply knowing what constitutes a negative behaviour, such as littering, is insufficient to prevent the behaviour from occurring and that individuals must also understand the negative consequences of engaging in such behaviours to avoid them. Participants mentioned that Littering affects people and animals. Littering can contribute to diseases like dengue fever and malaria. It may cause all forms of pollution and respiratory illnesses in people. Animals may become entangled or suffocate when they encounter littered items and die. Irving (2019) also claims that animals like turtles and dolphins may eat plastics as they drift out to sea. The plastic harms animals by limiting them of nutrition, obstructing their intestines and stomachs, or entangling around their bodies or heads, leading to death. Participants stated that littering affects the environment as most litter is not biodegradable. Many of these effects were described by Zylstra (2012). Participants also claimed that littering affects Guyana’s economy as it hinders tourism.

Moreover, participants knew that a littering law exists, but they were unaware of what the law was and what the penalty was. They emphasise that laws are not strictly enforced. In Guyana, there is a littering law: “The Litter Enforcement Regulations (2013) make it illegal for anyone to dispose of waste improperly”. Littering is illegal and offenders can be fined or jailed. Furthermore, participants gave several reasons for littering including lack of garbage bins, overflowing bins, and no close-by bin; supporting the literature that people litter due to bin unavailability (Asmui et al., 2017) and lack of bins in proximity (Schultz and Stein, 2009). Participants stated that people litter because it is a habit or simply carelessness. Waghorn-Lees et al. (2013) stated that litter in the environment is the result of a person’s careless attitude and behaviour. Consequently, until people come across a bin, they tend to be reluctant to carry “dirty” or unclean objects, so they just discard them anywhere. Even walking to the trash cans is too much of a burden for some people and they think that their

mess will be attended to by someone else. Participants claimed that littering can be curbed by education and conducting more campaigns to raise awareness about the dangers and consequences of littering. They believed that stricter enforcement of laws and harsher punishments of the littering laws will increase positive littering behaviours. Individuals are less likely to litter or imitate littering behaviour when they are punished for littering or observe others being punished for littering, according to Asmui et al (2017). Finally, participants suggested that adequate litter bins should be installed throughout Guyana especially in areas with high activity, garbage bins should be strategically place in proximity to recreational venues and litter bins should be emptied frequently.

CONCLUSION

As highlighted by the themes garnered from the study, it was found that littering is any improper or illegal disposal of material. Furthermore, littering behaviour, in turn, is the result of interactions between litter-related items, individuals, and the factors that influence their actions. It was noted that people continue to litter and engage in this negative behaviour because the law is not strictly enforced, there are insufficient garbage receptacles in strategic areas, and some people are simply careless and litter daily. This study discovered that there are numerous ways to combat this scourge in a sustainable manner, including education, stricter enforcement of the law, and having enough receptacles at key locations. In our capacity as educationists and academics, we initially preconceived a notion that littering was entirely unacceptable. However, upon introducing a reflexive diary and engaging in discussions with co-authors, we became increasingly aware of the intricacies surrounding the social dynamics of littering. This newfound understanding prompted us to recognise the depth required in addressing potential environmental health strategies to tackle the issue of littering within the context of Guyana.

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