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SOLID WASTE MANAGEMENT AWARENESS AND PRACTICES OF HIGH SCHOOL STUDENTS IN DIGOS CITY, DAVAO DEL SUR

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ABSTRACT

This study explores the solid waste management awareness and practices of high school students in Digos City. Despite the government's effort to battle the solid waste problems in the country, the community's understanding and practices remain the main challenge in attaining environmental sustainability. A total of 267 high school students in Digos City participated in answering the researcher-made survey questionnaires to test their level of awareness and practices on solid waste management and found out that they are aware of solid waste management and practicing it. However, the correlation between awareness and practices is low, and the probability that the correlation is not true in some communities is high. Considering that the community is aware of solid waste management but not practicing it, Republic Act No. 9003 must be enforced vigorously.

Keywords: Solid Waste Management, Republic Act No. 9003

1. INTRODUCTION

Republic Act No. 9003 provides programs and provisions to maintain the sustainability of the environment through responsible solid waste management. The law was enacted to solve the growing issues of solid waste in the country following the trash slide tragedy in Payatas, Quezon City (Guisansana, Mag-uyon, Nabing, & Festijo, 2020). House Bill No. 10651 and Senate Bill No. 1595 were consolidated and signed into law by President Gloria Macapagal Arroyo on January 26, 2001, enacting the Republic Act No. 9003 or the Ecological Solid Waste Management Act of 2000 (Sapuay, 2005). More than twenty years after the law's enactment, solid waste management remains a significant concern in the country. Under Section 55 of RA 9003, the Department of Education (DepEd) and other agencies were mandated to conduct education and information programs or activities on solid waste management.

Some of the challenges in solid waste management are improper segregation and disposal of solid waste that, if not adequately addressed, may negatively impact the environment, such as floods and surface water contamination. According to the study by Kaza, Yao, Bhada-Tata, and Van Woerden (2018), the world generates 2.01 billion tons of municipal solid waste annually, and when looking forward, global waste is expected to grow to 3.4 billion tons by 2050. The Philippines produces over 21 million metric tons of garbage annually from over 100 million people (Mayuga, 2021). Metro Manila generates 7000 metric tons of solid waste daily, and only 85% is collected. The uncollected garbage is dumped on streets or waterways (Bernardo, 2008).

This study explores the solid waste management awareness and practices of high school students in Digos City, Davao del Sur. The findings of this study can be helpful to the Local Government Units (LGUs) and other mandated government agencies to develop and implement solid waste management programs and activities that can promote environmental awareness and practices among students.

2. METHODOLOGY

This study is descriptive-quantitative research because it collects numerical data that are analyzed using statistical tools (Sukamolson, 2007). The researcher developed a questionnaire using Google Forms and distributed it through Messenger. Using an electronic survey and the advantage of technology makes data gathering fast and very convenient (Moises Jr, 2020). A total of 267 high school students, consisting of 16, 65, and 186 students in grades 7, 9, and 10, respectively, from different schools in Digos City, participated in the study.

The researcher developed a questionnaire based on the provisions of RA 9003 and existing studies on solid waste management. The questionnaire is divided into two parts: the first consists of five statements regarding solid waste management awareness, and the second consists of six statements regarding the respondents' practices on solid waste management. The reliability of the developed questionnaire was checked using the JASP application and obtained a Cronbach alpha value of 0.718, which is within the acceptable range of reliability (Tavakol & Dennick, 2011). The data gathered were tabulated to get the mean per item and interpreted using Table 1, and conduct Pearson's correlation test using the statistical tool JASP, to check the correlation between awareness and practices on solid waste management.



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3. RESULTS AND DISCUSSION

Table 1. Interpretation of Questionnaire

Rate	Solid Waste Management Awareness	Solid Waste Management Practices
3.26 - 4.00	Very High (VH)	Always (A)
2.51 - 3.25	High (H)	Often (O)
1.76 – 2.50	Low (L)	Sometimes (S)
1.00 - 1.75	Very Low (VL)	Never (N)

Table 2	Awareness	of Solid	Waste	Management
I abic 2.	Awareness	or Sonu	vv asic	Management

As a high school student, I am aware of the following:	Grade	e 7	Grade	le 9 Grade		e 10	
	WM	Interpretation	WM	Interpretation	WM	Interpretation	
R.A.9003 and its provisions	3.13	Н	3.06	Н	3.07	Н	
importance of solid waste management	3.13	Н	3.28	VH	3.31	VH	
materials considered recyclables and non- recyclables	3.25	Н	3.20	Н	3.21	Н	
negative impacts of improper solid waste disposal in the environment	3.13	Н	3.15	Н	3.13	Н	
burning of solid waste is prohibited	3.13	Н	2.89	Н	3.16	Н	
Overall Weighted Mean	3.15	Н	3.12	Н	3.18	Н	

Table 3. Practices in Solid Waste Management

As a high school student, I:	Grade	7 Grade 9 Grade 10		Grade 9 Grade 10		10
	WM	Interpretation	WM	Interpretation	WM	Interpretation
sort my waste (biodegradable, non-biodegradable, and recyclable)	3.56	A	3.31	A	3.03	0
make an effort to reduce the waste I generate	3.25	0	3.05	0	3.11	0
dispose of hazardous waste properly	3.69	А	3.26	А	3.47	А
reuse and repurpose items when possible	3.31	А	3.08	0	3.08	0
compost food waste	3.19	0	2.95	0	2.95	0
bring my trash with me when there are no trash bins nearby	3.75	A	3.52	А	3.56	А
Overall Weighted Mean	3.46	Α	3.19	0	3.20	0

3.1 SOLID WASTE MANAGEMENT AWARENESS

The researcher measured the level of awareness using five indicators: understanding of the law and provisions, attention to the importance of solid waste management, awareness of recyclable materials, awareness of the negative impact of improper solid waste disposal in the environment, and awareness of the burning of solid waste. Understanding solid



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waste management will motivate the students to participate in environmental advocacies and protection plans. In contrast, a lack of solid waste management awareness will lead to serious environmental issues (Desa, Ba'yah Abd Kadir, & Yusooff, 2011). Table 2 shows the level of awareness of students per grade level.

As shown in **Table 2**, grades 7, 9, and 10 students have an overall weighted mean of 3.15, 3.12, and 3.18, respectively, indicating that the students have a high awareness of managing solid waste.

3.2 SOLID WASTE MANAGEMENT PRACTICES

The researcher measured the level of consistency in practicing solid waste management using six indicators: waste sorting, waste reduction, disposal of hazardous wastes, recycling/reusing of items, waste composting, and solid waste management when trash bins are not around. The Reduce, Reuse, and Recycle (3R) are the most preferred sustainable solid waste management approach. 3R helps save natural resources and reduces the volume of dumped solid waste into landfills (Samiha, 2013). Table 3 shows the level of consistency in solid waste management practices of high school students.

Table 3 shows that grades 7, 9, and 10 students have an overall weighted mean of 3.46, 3.19, and 3.20, respectively, indicating that most students always practice proper solid waste management.

Table 4. Correlation of Solid Waste Management Awareness and Practices

Pearson's Correlations

	Pearson's r	р
Solid Waste Management Awareness - Solid Waste Management Practices	0.379	0.265

Note. All tests one-tailed, for positive correlation

3.3 CORRELATION OF AWARENESS AND PRACTICES

Table 4 shows the correlation between awareness and practices in solid waste management. Pearson's r value is 0.379, indicating that awareness and practices in solid waste management have a medium positive correlation. However, the p-value is 0.265, which suggests that the correlation observed may not represent the true relationship between awareness and practices in solid waste management. There's a high probability that the correlation between awareness and practices is untrue. According to Mei, Wai, and Ahamad (2016), strong environmental awareness does not always indicate more excellent environmental behavior practices. Being aware of solid waste management alone does not predict the behavioral practice of an individual.

4. CONCLUSION AND RECOMMENDATIONS

The study shows that high school students' awareness correlates positively to solid waste management practices. However, there is a probability that the correlation is not true in some other groups or communities. In this group of participants, most know the importance of proper solid waste management and practicing it. The students are also mindful of the consequences caused by improper solid waste management towards the environment. In addition, the students are also aware of the existence of the law RA 9003 and its provisions.

As the probability of a positive correlation between awareness and practices in solid waste management is not true in some other groups or communities, the researcher recommended continuing and enhancing the programs promoting solid waste management awareness and practices at school. The school should also provide policies, such as prohibiting the use of plastic bags inside the school and using reusable food containers to reduce the generated waste. In addition, the researcher recommended extending the information programs into barangay communities by conducting regular activities on proper solid waste management and regular monitoring to enforce the provisions of RA 9003. By educating the high school students, including the communities, with knowledge and promoting responsible waste management practices, Digos City can become an environmentally sustainable place.

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