

STANDARDIZATION OF THE SCALE TO MEASURE THE PRACTICES OF THE HOMEMAKERS TOWARDS MANAGING THEIR HOUSEHOLD WASTE

¹ Kalpana Srivastava (Ph.D.Scholar), ² Nidhi Gupta

¹ Associate Professor, ² Associate Professor

¹ Dept. of Family Resource Management,

¹ S.M.Patel College of Home Science, Vallabh Vidya Nagar, Gujarat., India.

Abstract: Solid waste comprises kinds of waste and one is household waste that generates in-home through various household activities. This waste has all categories of waste i.e. wet, dry, hazardous and sanitary waste. It's essential to identify the practices followed by homemakers for disposal of household waste for a sustainable environment. Knowledge, attitude and exposure of people influence the practice of waste management. In the current research study, the three-point Likert rating scale has been developed to measure the waste management practices of the homemakers. The scale involved two main parts: (i) Segregation of HHW (ii) Disposal of HHW. The content validity of the scale has been checked by ten judges of diverse fields. Forty-eight items from the scale were tested on 470 homemakers. The reliability of the scale was found 0.67 with few items that have (-) and (0) corrected item-total correlation value, which was declining the overall reliability of the scale. After dropping those items from the scale, again the reliability was checked and it has been discovered that there was increase in the overall reliability of the practice scale. As a final standardized scale, the practice scale comprised of thirty items with 0.77 value as the overall reliability.

Index Terms - Waste management, Household, Practices, Homemakers and Women.

I. INTRODUCTION

Everything has a beginning and an end. After a stretch of time, things that have been used by folks, turn out to unserviceable, time-worn or undesirable and that transforms into waste. Possibly it could be said that waste has a life cycle and once it's over, the item needs to be disposed off. Manner of waste disposal is very much connected to the environment as improper waste disposal is imperiling the environment. In recent years the problem of waste has increased globally and it has become important to handle this waste efficiently. In developing countries, the problem of managing waste has become more intense.

The ever rising population has resulted in immense pressure on demand for food, shelter and on other natural resources leading to various environmental problems including waste generation and waste management. (Twumasi'2017)⁹

The approaches of developed and developing countries regarding the waste management could differ but the ultimate aim is to protect the environment although, it varies for urban and rural populations, industrial and residential areas. Generally, the local government holds the responsibility for managing the waste in metropolitan and rural areas. While the industries are responsible to take care of their own waste. (<http://www.wrfound.org.uk/>)¹²

There are various methods or ways of discarding the waste, some common methods are landfill, incineration, recycling, composting, plasma gasification, waste to energy and the most simple and the easiest method is the minimization of waste. (<https://www.conserve-energy-future.com/waste-management-and-waste-disposal-methods.php>)¹³ According to the dictionary, "Practice is any method, procedure, process, or rule used in a particular field or profession."

(<http://www.businessdictionary.com/definition/practice.html>)¹⁴ Practices of waste management could be best, good, poor or very poor. The Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH (on behalf of the Ministry of Urban Development, Government of India, as part of the Indo-German Cooperation) has reported that there are many cities where people have started following good practices to manage their waste. Kochi reflects best practices of waste management, whereas, the entire Panaji city segregates the waste before disposing. In Panaji dry waste is segregated for recycling, organic waste is composted and dry waste rejects sent for co-processing among others good practices. (GIZ'2018)⁴

In general the knowledge and economic consideration also seems to play a major role in people's orientation and perception as well as attitude towards solid waste management practices. The gender could also make the difference in practices related to household waste because women are more sensitive and empathetic towards the ill effect of their household waste. (E.O. Longe, et al'2009)⁷

Yodha stated in his study that majority of the solid waste generated at home was food debris and plastics that were stored in mostly in uncovered plastic containers and disposed without separation. Although waste was disposed appropriately at communal sites, some community members practiced crude dumping in any available space, including gutters, holes, streets, and bushes. (Yoada et al.'2014)¹¹

The study of Adogu has depicted poor waste management practices among residents of Owerri Municipal in Nigeria though, they were familiar with the various techniques of waste disposal. It had been found that two-third of the respondents practiced open dumping while slightly less than that preferred to burn their wastes in open. These methods were definitely not ideal since they create potential sources of infection, air pollution as well as aesthetic blithe. (P. O. U. Adogu et al.'2015)¹

The study of Twumasi indicated that, less than half of the respondents in Ghana were committed to waste minimization. Also, less than two-third of the respondents threw their household waste outside their homes while only few people did not. Some of the respondents mentioned that household wastes were thrown outside homes and in nearby bushes because waste containers were

not available in certain suburbs. Moreover, it was reported that wastes containers were not sufficient for disposing the waste. (Twumasi'2017)⁹

Tatlonghari and Jamias had stated in their study of Sta. Rosa City, Philippines that the maximum number of respondents, mostly women has a decent knowledge of apposite waste disposal and they practice what they know. Usually, people, reused and recycled their biodegradable wastes. This reflects good practices of people but this has to be reinforced. (Tatlonghari & Jamias'2010)⁸

Sustainable environment and healthy living are indispensable from proper waste management. Public participation has momentous in role in any waste management. Similarly their participation increases the competence of waste management system.

II. JUSTIFICATION OF THE STUDY

There are diverse sources of waste generation, and households are one of the tangible source. The increased activities in the households has increased the volume of waste too. The household waste management is very much reliant on the knowledge and attitude of the homemaker. The knowledge and attitude related to waste management reflects in their daily practices of the person. Perception and willingness of the homemakers towards proper management of the waste generated in their homes is absolutely vital. Good practice of household waste management necessitates the segregation of waste at household level. Segregation of waste does not need much of time but it requires consciousness.

It was disclosed in Bengaluru, that more than three-fourth households were not conscious of the waste generated and ways of disposal of their household waste. It was revealed that people just dispose off their waste on the road and were not aware of the recycling of waste. (Kumar. M, Nandini. N'2013)⁶

Banga reported in her research study, that people in Urban Kampala do not separate waste. The items that they think could be reused or recycled were not mixed with the rest of the garbage. However, those households who have adequate space in their yards normally throw waste in the backyard and remove plastics when the garbage is dry. Households who don't segregate their household waste had several reasons like lack of space, don't have enough money for separate bins, shortage of time and non-availability of the market for recyclable items. (Banga'2011)²

Through the review, the studies show that proper waste management practice is desirable. To improve the practices of the homemakers related to their household waste management it's essential to find out the practices they are following currently. There were few studies that had studied the practices of waste management with a standardized scale. This inspired the investigator to develop a standardized scale to study the current practices of homemakers.

III. THE PURPOSE OF THE PRESENT STUDY WAS TO

- (1) Demeanor an exhaustive review of literature in the related research area.
- (2) Ascertain the items based on facts and related researches on the management of household waste.
- (3) Standardize the scale for assessing the practices of the homemakers related to household waste management.

IV. METHODOLOGY

4.1 Selection of Tool

An ample review of literature was done to prepare practice scale for household waste management. Several online and offline research studies, articles and magazines related to waste management and environment were incorporated in the review of literature. A list of fifty items related to segregation and disposal of household waste was prepared and given to the panel of 10 judges, from different fields, to check the content validity of the items. The irrelevant items were removed from the scale and the list assimilated 48 items in total after the content validity check. The practice scale was constructed on the base of three point Likert Scale. The scale was divided in to two parts:

- Practices related to Segregation of household waste
- Practices related to Disposal of household waste

4.2 Sample Selection

Forty-five homemakers from Vallabh Vidyanagar were selected as the representative sample for the pilot study to check the reliability of each statement and the overall scale. The Sample selection was done through a stratified random sampling technique. There were total of 9 wards in the study area out of that 5 homemakers from each ward were selected randomly. The final reliability of the scale was tested on 470 respondents including those 45 respondents.

4.3 Scoring of the Scale

In Social Sciences generally, Likert scale is used. Likert items were first introduced by Rensis Likert (1932). Beside 5 points, the scale could have 3, 4, 6, 7, or more options. (Brown'2011) The Likert scales entail a number of items and respondent gives the reply for each item in the scale. Each response is given a score that articulates the favorableness or un-favorableness of the item. The overall score represents the respondent's idea to the concerned subject (Kothari'2011)⁵.

In the current study the researcher has used three point Likert rating scale to measure the practices of the home makers related to household waste management. The three point scale consisted of "Always", "Never" and "Sometimes". The scores assigned for the positive statement were one (3) to (1) i.e. always was assigned three (3), never was assigned two (2) and sometimes was assigned one (1). In the negative statements it was reversed i.e. always was assigned one (1), never was given two (2) and sometimes was given one (1) respectively.

Likert scales contain multiple items and are more likely to reliable than single items. Reliability of the Likert scales can be checked by Cronbach alpha method or another appropriate reliability estimate (Brown'2011)³. In 1951, Lee Cronbach had developed the Cronbach Alpha to offer a measure of the internal reliability of a scale or test. That is expressed as a number between 0 and 1(Cronbach, 1951) which is used for items whose responses are on a scale. Therefore, in the present study the reliability of the practice scale was tested through Cronbach Alpha technique. (Quansah'2017)¹⁰

V. RESULTS AND DISCUSSION Reliability of the practice scale was then tested on forty-eight items and it revealed that the overall reliability of the scale came as 0.67. In order to increase the reliability of the scale, the individual items were checked. It was realized that few items has (-) and (0) corrected item-total correlation value, that was declining the reliability of overall scale. This reflected that these items were not correlated Ref. Table: a). Subsequently, the items with (-) or (0) value were dropped from the scale and all over again the reliability of the scale was checked. It was found that dropping those items had increased the reliability of the scale up to 0.77 with thirty items in the scale. (Ref. Table: b)

Table: (a) List of items dropped from the Practice Scale

| S. No. | Statements | Corrected Item-Total Correlation |
|--------|---|----------------------------------|
| 1 | I segregate my household waste before disposal | -.017 |
| 2 | My kitchen waste is thrown in the dustbin / garbage bin. | -.130 |
| 3 | I use garbage bag to throw my household waste. | -.017 |
| 4 | I carry bag whenever I go for shopping. | .037 |
| 5 | I use disposable plates, spoons and glasses when more people gather in the house. | -.026 |
| 6 | I give leftover food to my maid. | .074 |
| 7 | I discard old and un repairable equipment in waste. | -.025 |
| 8 | I don't sell old Newspapers/ Magazines/ Notebooks to pastiwala. | -.107 |
| 9 | I discard broken glasses or tube lights separately. | .059 |
| 10 | I use paper napkins for gatherings and parties. | .071 |
| 11 | I like gifts with heavy and fancy packaging. | .071 |
| 12 | I don't to use the peelings of vegetables/fruits in my garden. | .058 |
| 13 | I throw away the empty bottles of shampoo, floor cleaner etc. in waste. | .037 |
| 14 | I don't like to use leftover food to prepare any new recipe. | -.052 |
| 15 | I buy products packed in jars/bottles. | -.147 |
| 16 | I throw outdated cosmetics in garbage bin. | .080 |
| 17 | I use blank papers from old note books for writing. | -.425 |
| 18 | I don't carry any bag when I go for shopping. | -.127 |

Table: (b) Final Reliability of the Practice Scale

| Reliability Statistics | | Scale Statistics | | | |
|------------------------|--------------|------------------|----------|-------|--------------|
| Cronbach's Alpha | No. of Items | Mean | Variance | S. D. | No. of Items |
| .77 | 30 | 70.3 | 44.96 | 6.70 | 30 |
| .67 | 48 | 108.5 | 52.56 | 7.25 | 48 |

VI. CONCLUSION

It can be concluded that the items with low value of corrected item-total correlation, decreases reliability of the scale. So, to get decent reliability of the scale it's essential that the items, not associated, inarticulate or inapt should be dropped. In the present study the ultimate practice scale comprised of thirty items, where two parts of the scale were:

- Practices related to Segregation of household waste (comprehended with 11 items).
- Practices related to Disposal of household waste (comprehended with 19 items).

Reliability of the practice scale too escalated from 0.67 with 48 items to 0.77 with 30 items. This standardized practice scale could be helpful in measuring practices of homemakers of various places. Based on their practices, future action plans for improvement could be inspired that would support in developing sustainable environment for all.

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