

ABSTRACT

The Public Health Assessment of Excreta Disposal in the Kingston, St Andrew Metropolitan Area.

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Excreta disposal in the Kingston, St Andrew Metropolitan Area was assessed by performing an audit of the processes carried out by the National Water Commission (NWC) and by conducting a survey in the Kentyre area. The audit took the form of a review that served to establish the extent to which processes at the NWC conformed to predetermined standards set locally by the Natural Resources Conservation Authority (NRCA) and internationally by the Environmental Protection Agency (EPA) and the United Nations Environment Programme (UNEP). This audit was facilitated by:

- (a) site visits to sewage treatment plants operated by the NWC
- (b) interviews with key personnel involved with excreta disposal
- (c) an examination of the records relating to the testing of the influent and effluent from sewage treatment plants within the Kingston, St Andrew Metropolitan Area

A questionnaire instrument was administered to 40 randomly selected households in the Kentyre area to determine residents' knowledge, attitudes and practices towards excreta disposal.

Of the 15 plants operated by the NWC in the KSA Metropolitan Area, five (33.3%) were primary facilities, nine (60%) were secondary and there was one (6.7%)

tertiary facility. Eleven of the fifteen (73.3%) operated satisfactorily, one (6.7%) was unsatisfactory and three (20%) were non-operational. All of the effluent from those plants that were operational was discharged into rivers and gullies and eventually flowed into the sea. Raw sewage from plants which were non-operational also flowed into the sea.

The site visits to the plants gave an insight to the operations at one tertiary and one secondary plant. These were in conformity with established processes for primary and tertiary facilities but there was concern for certain practices such as the exposure of raw sewage to the environment and vectors, and unhygienic practices of workers.

Monitoring of sewerage treatment plants of the National Water Commission (NWC) is done both internally by the NWC and externally by the NRCA. Results of analysis for 1998 indicated that of the effluent samples evaluated for faecal coliform (n=57), 25/57 (38.6%) were satisfactory and 61.4% were unsatisfactory, using the NRCA standard of 1000 mpn/100mls. When compared to the effluent standard for BOD (20mg/l), the results showed that 38/68 or 59.9% of the individual readings were satisfactory and 30/68 or 44.1% were unsatisfactory.

The majority of respondents to the questionnaire instrument were females (75% compared to 25% males). The mean age among males was 29.8 ± 9.4 years while for females the mean age was 39.8 ± 16.3 years. The methods of excreta disposal most commonly used by respondents were pit latrines, septic tanks and the pour flush method. Respondents were aware of all the conventional methods of excreta as well as the unsatisfactory practice of open defecation. 30.8 % were not satisfied with the present excreta disposal methods in use, 42.6 % were satisfied and

21.3 % were somewhat satisfied. 60 % had a good attitude towards excreta disposal. 35 % had a fair attitude and 5% had a poor attitude toward to excreta disposal.

It is evident to the investigator that excreta disposal in the KSA Metropolitan Area is not of a satisfactory nature. More of the sewage treatment plants should be upgraded to tertiary facilities and the NWC needs to ensure that all of their plants function in a satisfactory manner so that the effluent meets the standard set by the NRCA. The practice of having raw sewage flowing into the sea should also be addressed since this is a serious public health hazard with negative implications for health and the environment. The NWC also needs to pay closer attention to their data recording and storage methods to ensure easy retrieval and analysis. Workers at sewage treatment plants operated at the NWC should be more compliant with the use of safety gear.

Members of the community were well informed with regards to proper excreta disposal methods but there needs to be further education and empowerment so they can make better choices with regard to excreta disposal. Health education activities should target individual community members as well as community leaders. Developed countries as well as international organizations need to continue support to developing countries with regards to the proper management of excreta.