INTRODUCTION

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Waste management is a crucial is sue in preventive health. In 1980 the WHO launched a decade, which was to lead to proper toilet facilities for everybody in the world by the year 1990. The health implications were clear, but there was insufficient understanding of the social and cultural aspects of people's habits of defecation. This publication addresses both sanitary and social aspects of toilet behaviour through three case studies in southern Ghana. The objective is to draw attention to the urgency of a new policy of sanitation and waste management based on good understanding of people's ideas and practices concerning defecation. Indeed the public health is the public wealth. This may be achieved through effective public health and environmental education accompanied by the provision of the appropriate and affordable sanitary facilities.

Health implications

Human excreta usually carry all sorts of organisms, which may cause disease on infection through contamination. These organisms or agents include viruses and bacteria commonly termed germs and parasites, which include protozoa and helminths or worms. A number of these agents or infections depend for their persistence on passing from the excreta of one person to the mouth of another. Auto or self-infection occurs among a few like the seat-worm. There are also a few of them e.g. hookworm and schistosomes which gain entry into the body by directly penetrating through the exposed skin on contact.

There are many obvious and also unsuspecting conditions, behavioural and environmental, which enhance the transmission processes, and these are readily encountered in endemic populations particularly developing countries. In these places one observes the indiscriminate disposal of human excreta in the immediate surroundings and environment. Where some efforts have been made to dispose of them, these may not have been proper or adequately effective. Yet all these infections are likely to decrease in the population or community with the implementation of measures to properly collect the excreta and dispose of them or treat them. The proper management of liquid waste should therefore greatly enhance public health. In this regard it is necessary to appreciate certain factors which have bearing on excretal transmission and the agents involved.

The viruses and bacteria and some protozoan germs in human waste require no period of latency and are immediately infective. Moreover only a tiny dose of infection of the germ is enough to cause illness in the affected person since the germs multiply rap-

idly on entry into the human system. The requirements for the safe collection and disposal of such waste must therefore be very stringent, far more so than for the other agents, the worms.

Most of the helminths or worms require a period of latency to be infective and therefore would not be immediately infective on evacuation. Some may even require intermediate hosts. The requirement for the collection and disposal of excreta containing such disease agents are less stringent than those for the germs discussed above. Moreover they often require repeated doses of infection to elicit the disease conditions.

With the above in mind, the management of liquid or human waste to ensure safe and healthy environment requires careful and deliberate appreciation of the factors necessary to avoid and eliminate contact with the agents of disease. The merits and short comings of all the management practices in use should be carefully assessed and implemented with all the necessary hygienic conditions which may otherwise undermine the efforts of the management practices adopted; pit-latrines, bucket-latrines, KVIPs, septage systems, treatment of liquid waste on collection and the subsequent use of composts developed from them having ensured the destruction of all pathogens during the treatment process.

The aim of all these provisions and measures in liquid waste management must be to isolate the population from their excreta and disease infection agents and thus ensure sound public health in the communities.

Thus there is the absolute need to prevent indiscriminate defecation in the immediate surroundings of human habitation, settlements, labour camp sites and refugee centres. If the provision of pit-latrine is the affordable solution, this must be done. In that case the area must be hygienically maintained, preventing access by flies, which may spread faecal matter containing the germs i.e. viruses, bacteria and protozoan parasites. The surroundings must be dry to prevent infection by hookworms. The selected sites for pit-latrines must take cognisance of underground water systems and wells to avoid contamination through seepage. If it is bucket-type latrines that are appropriate or affordable, these must take into consideration the health implication of the removers and carriers. The final deposition sites must also consider the environmental implication of such dumping as in the case of pit-latrines, and also possible contact with surface water bodies.

The management systems that involve final treatment should take relevant aspects of the above into consideration in addition to the quality and safeness of the effluent to be discharged into natural drains or streams. In addition, the safeness of compost derived from the treatment and its use in food production must be borne in mind.

Social aspects

Practices concerning dirt are firmly embedded in social and cultural traditions. Perception and tolerance of dirt vary between and within cultures and so do concepts of privacy and shame.

A remarkable phenomenon in Ghana's management of liquid waste is the 'popularity' of public toilets. The majority of the population (exact figures are hard to come by[1]) have no private toilets and do not seem particularly worried about the lack of such a facility. Apparently, for many people building or renting a house, a toilet is not a priority. Some seem to prefer *not* to have the toilet on the premises. In Accra, as Obirih-Opareh mentions in his contribution, existing toilets may even be transformed into rooms or stores forcing the inhabitants to resort to public places of convenience.

Such preferences and practices run counter to recommendations by the WHO and other international agencies which stipulate that each household should have its own facility. Assuming that public facilities are kept less clean than private ones, one may expect that the former carry greater health risks for their occupants than the latter.

The impression exists that Ghana is quite unique in its wide-spread use of public toilets (cf., Van der Geest 1999). This publication investigates why this may be the case. It further explores the social, cultural and economic factors leading to hazardous dealing with human waste. Concepts of cleanliness and attitudes to towards bodily excretions usually are the most entrenched in human cultures. Attempts to influence people's management of waste should therefore start from a clear understanding of such cultural and social practices. Up to now, however, such understanding hardly exists in any documentary form.

Research and policy

Defecation is not a topic which is freely discussed in ministerial offices or university lecture rooms. It rather is surrounded and obscured by feelings of embarrassment and disgust and is hidden from public debate. 'Shit' is not a proper topic for academic discourses or policy statements. In spite of their keen theoretical interest in the concept of pollution, social researchers have overwhelmingly neglected defecation in the research efforts.[2]

Similarly, policy-makers have turned a blind eye on the problems of toilet and sanitation, apparently because of their utterly unpleasant character. Post, in his contribution, makes the ironic comment that policy-makers – as well as most researchers – can afford to neglect the dreadful state of many toilets in the community because they themselves do not have to rely on them. They have more comfortable places to relieve themselves.

The three papers in this publication are an attempt to reverse this tendency

[1] Figures for Accra, provided by Stephen et al. 1994 and Konadu-Agyemang 1998, are difficult to interpret. The former, for example, report that in 1990, 30% of the population resorted to public toilets, 20% had their own private toilet and 50% 'shared' a toilet with others in the house. It seems, therefore, that the majority use semi-public toilets, but exact descriptions of such 'semi-public' facilities are lacking.

[2] An exception is Ndonko's study of social and cultural aspects of defecation in two Cameroonian societies. Flavier T. Ndonko is an anthropologist from Cameroon (Ndonko 1993).

of avoidance and to draw attention to the importance and urgency of the matter. The paper on Accra, by Nelson Obirih-Opareh, is based on research on 'Decentralisation and waste management in the Accra Metropolitan Area", funded by the Netherlands-Israel Development Research Programme (NIRP). The Kumasi paper, by Johan Post, results from a co-operative project of the Kumasi Town and Country Planning Department, the Department of Planning of the Kwame Nkrumah University of Science and Technology, and the Institutes of Planning and Demography and Development Research of the University of Amsterdam. The paper on the rural town of Kwahu-Tafo, by Sjaak van der Geest, is derived from his anthropological study of old age and care, financed by the Sociology and Anthropology Department of the University of Amsterdam. All four authors of this publication take part in the NIRP research project on Decentralisation and waste management.

Notes

1. Some of the ideas discussed in this chapter were published in an earlier article (Van der Geest 1998).
2. We thank Johan Post and the participants of a 'round table' on liquid waste management at STEPRI/CSIR for their constructive comments. This chapter is a first exploration of an important but neglected domain of human thought and behaviour. We are aware that more anthropological fieldwork (participant observation) needs to be done to reach an understanding of the 'paradoxes discussed here.

References

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