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PARTICIPATION OF PRIMARY SCHOOL TEACHERS IN ORAL HEALTH EDUCATION IN RUNGWE DISTRICT, TANZANIA

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## PARTICIPATION OF PRIMARY SCHOOL TEACHERS IN ORAL HEALTH EDUCATION IN RUNGWE DISTRICT, TANZANIA

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### ABSTRACT

**Background:** Tanzanian primary school teachers have long been utilised as oral health educators but little is known about their level of participation.

**Objectives:** To assess the participation of primary school teachers as general and oral health educators.

**Design:** Cross-sectional, using structured self-administered questionnaires.

**Setting:** Rural and urban Primary Schools in Rungwe District, Mbeya Tanzania.

**Participants:** Primary school teachers from 15 rural and 4 urban schools.

**Main outcome variables:** Provision of oral health education.

**Results:** Teachers with primary education, who are teaching in lower grades were significantly more active in providing general and oral health education (OHE) than those with secondary education and who teach pupils in higher grades.

**Conclusion:** Oral health education seems to be given mainly to primary school pupils in lower grades; teachers involved in oral health education provision were mainly female juniors in the profession and relatively young by age (below 40 years old).

**Recommendation:** There is a need for influencing teachers of pupils in higher grades and males to be involved in oral health education programmes throughout their teaching profession.

### INTRODUCTION

Several studies have shown success in the use of school teachers as oral health educators in terms of improved oral health among the school children(1-3). However, other reports show that some teachers are reluctant to participate in oral health programmes that require supervised actions(4). This has been linked with the teachers having lack of confidence due to inadequate knowledge of oral health matters(5-10).

Since the 1980's, Tanzania has opted to use school teachers as oral health educators by integrating oral health education in the school syllabus(11-13). Despite the willingness to teach general oral health education, teachers seem to lack formal basic training in oral health matters such as dietary counselling and brushing skills(14). Such deficiencies may undermine the usefulness of teachers in promoting oral health(15). There is little and insufficient published information regarding the participation of Mbeya primary teachers in imparting oral education to children. Thus the aim of this study was to assess the extent of teachers provision of general and oral health education to primary children in the Mbeya region of Tanzania.

### MATERIALS AND METHODS

The study was carried out in the south-western highlands of Tanzania, in the district of Rungwe in Mbeya region. It involved a sample of 239 teachers from 19 rural and urban primary schools (Table 1). A school was a unit of sampling, but all teachers in the selected schools were eligible participants. An individual was a unit of analysis. This study population was obtained through stepwise cluster sampling. The only one urban administrative division, and one out of the three rural divisions from the study district were selected by simple random sampling. Then a simple random sampling procedure was again applied to get four out of the seven urban, and 15 out of the 52 rural schools from the study divisions. Every teacher (n=239) in the selected schools was eligible for participation. The participation rate in the study was 97% (n=232), as some teachers were absent from their schools for various reasons such as sick leave. The mean number of teachers in each school was 20 in the urban, and eight in the rural schools. The socio-demographic description of the participating in-services is shown in Table 2. Structured (mostly closed ended) self-administered questionnaires and a pen were distributed to each participant after verbal consent and a standardised explanation of what to do. Details of the methodology can be found elsewhere(16).

Data analysis was done using SPSS version 6.1 files. Frequency distribution and cross-tabulation were computed.

Pearson's chi-square statistic and independent sample t-test were used to test the relation between groups by gender, age, experience, and workplace. The critical value was 0.05

## RESULTS

Table 2 shows that 55.9% of the participants were female teachers. Those aged below 40 years old were 53.5% and most teachers were married (80.3%), those mainly located in the rural schools were 59.4%. Furthermore, a large proportion of teachers (61.1%) had no secondary education and 62.7% of teachers had been in the profession for over 15 years. It was also shown that the responsibility for teaching lower grade pupil was for 72.7% of teachers. Table 3 shows that a significantly higher proportion of the female teachers (78.2%) as compared to males (66.3%) reported to give general health education ( $\chi^2=3.93$ , 1 df,  $p<0.05$ ). However, there was no

statistically significant difference by gender with regard to provision of dietary counselling, oral hygiene instruction and teaching on the causes of tooth decay and gum disease. Table 4 shows the teachers without secondary education were more active with respect to the provision of tooth brushing instructions ( $\chi^2=11.93$ , 1 df,  $p<0.001$ ). There was statistically significant difference by gender with regard to provision of dietary counselling, provision of general health education and the teaching on the cause of gum disease and tooth decay. Table 5 shows that there was a significantly higher proportion of junior teachers (with a teaching experience of less than 15 years) who were active in teaching the causes of tooth decay and gum disease than their senior counterparts ( $\chi^2=7.47$  and  $3.76$  respectively, 1 df,  $p<0.05$ ). There was no discernible difference regarding the provision of general health education, dietary counselling and tooth brushing by teaching experience.

Table 1

*Primary School Teachers in Rungwe District, Tanzania*

Group description	Target population		Study sample(eligible)		Participation	
	No.	%	No.	%	No.	%
Urban in-service teachers	175	8.4	98	19.1	97	99
Rural in-service teachers	1632	78.4	141	27.5	135	96
Total in-service teachers	1807	86.8	239	46.6	232	97

Table 2

*Socio-demographic description of the participating in-service teachers*

Description	Participation		Total No.
	No.	%	
Females	128	55.9	
Males	101	44.1	229
Age below 40 years	118	53.5	
Age of above 40 years	103	46.5	221
Single, divorced/separated or widow(er)s	45	19.7	
Married teachers	184	80.3	229
Academic primary education level	138	61.1	
Academic secondary education level	88	38.9	226
Teachers in the urban primary schools	93	40.6	
Teachers in the rural primary schools	136	59.4	229
Teaching experience of below 15 years	84	37.3	
Teaching experience of above 15 years	141	62.7	225
Teaching responsibility in lower classes	160	72.7	
No teaching responsibility in lower classes	60	27.3	220

Key: Lower classes=standard(grade) 1-4 of the primary education years.

Table 3

*Responses of teachers regarding provision of oral health education by gender*

Gender Response Questions	Females (No.=128)		Males (No.=101)	
	Often % (No.)	Seldom/Never % (No.)	Often % (No.)	Seldom/Never % (No.)
I give general health education regularly	78.2 (97)	21.8 (27)	66.3 (65)	33.7 (33)*
I give dietary counselling	77.8 (98)	22.2 (28)	72.3 (73)	27.7 (28) NS
I instruct brushing tooth	86.4 (108)	13.6 (17)	21.4 (21)NS	
I teach causes of tooth decay	72.6 (90)	27.4 (34)	64.0 (64)	36.0 (36) NS
I teach causes of gum disease	66.4 (81)	33.6 (41)	62.0 (62)	38.0 (38) NS

\* $P<0.05$ ; NS= Not statistically significant

Table 4

Responses of teachers regarding provision of oral health education by basic education

Basic education Response Question	Primary education (No.=138)		Secondary education (No.=88)	
	Often % (n)	Seldom/Never % (n)	Often % (n)	Seldom/Never % (n)
I give general health education regularly	77.3 (102)	22.7 (30)	69.0 (60)	31.0 (27) NS
I give dietary counselling	79.4 (108)	20.6 (28)	69.3 (61)	30.7 (27) NS
I instruct brushing tooth	90.2 (120)	9.8 (13)	72.4 (63)	27.6 (24)
I teach causes of tooth decay	72.8 (99)	27.2 (37)	63.5 (54)	36.5 (31) NS
I teach causes of gum disease	68.7 (92)	31.3 (42)	58.8 (50)	41.2 (35) NS

\*\*P&lt;0.001, NS=Not statistically significant.

Table 5

Responses of teachers regarding provision of oral health education by years in service

Years in the Service Response Questions	<15 years (No.=84)		15+ years(No.=141)	
	Often % (No.)	Seldom/Never % (No.)	Often % (No.)	Seldom/Never % (No.)
I give general health education regularly	72.0 (59)	28.0 (23)	72.8 (99)	27.2 (37) NS
I give dietary counselling	81.0 (68)	19.0 (16)	71.2 (99)	28.8 (40) NS
I instruct brushing tooth	84.3 (70)	15.7 (13)	82.4 (112)	17.6 (24) NS
I teach causes of tooth decay	80.2 (65)	19.8 (16)	62.6 (87)	37.7 (52)
I teach causes of gum disease	72.8 (59)	27.2 (22)	59.9 (82)	40.1 (55)

\*P&lt;0.05; NS=Not statistically significant.

Table 6

Responses to teachers regarding provision of oral health education by allocation of teaching classes

Teaching class (ES) Response Question	Teaching in lower grades (No.=160)		Teaching in upper grades (No.=69)	
	often % (No.)	Seldom/Never % (No.)	Often % (No.)	Seldom/Never % (No.)
I give general health education regularly	77.6 (121)	22.4 (35)	61.4 (35)	38.6 (22)
I give dietary counselling	79.2 (126)	20.8 (33)	66.1 (39)	33.9 (20)
I instruct brushing tooth	85.9 (134)	14.1 (22)	74.1 (43)	25.9 (15)
I teach causes of tooth decay	70.7 (111)	29.3 (46)	65.5 (38)	34.5 (20) NS
I teach causes of gum disease	64.7 (101)	35.3 (55)	64.9 (37)	35.1 (20) NS

P&lt;0.05; Ns=Not statistically significant.

Moreover, there was no statistically significant difference among teachers regarding oral health counselling by workplace or location. The general picture shown in Table 3-6 suggest that about two thirds of all teachers provided oral health related information to their pupils. A significantly higher proportion of teachers who were teaching in lower classes (grades 1-4) than those who were teaching in higher classes(grades 5-7) were providing general health education, diet counseling and tooth brushing instruction to pupils( $\chi^2= 5.56, 4.04, \text{ and } 4.09$  respectively, 1 df,  $p<0.05$ ). There was no statistically significant difference between the teachers of higher and lower classes in relation to teaching on the causes of tooth decay and gum disease (Table 6)

## DISCUSSION

The study design was cross-sectional, allowing a massive collection of information from many primary

school teachers within limits of resources. A self-administered questionnaire was carefully constructed and organised to minimise information bias. The questionnaire was pre-tested among teachers with similar working environment and academic background to assess the binding items response validity. The form of school-to-school personal distribution of the questionnaire in this study has improved the response rate to 97% as compared to 60-78% from the postal questionnaires(17). Previously health-related studies regarding social desirability in the context of the subject's responses suggest that answering on factual questions is less subject to the effect of social desirability as compared to evaluative and emotional questions, at least among young people(18).

A substantial proportion of teachers reported to have provided oral health education on a regular basis with no statistically significant difference between urban and rural teachers in this regard. This is consistent with the previous finding by Nyandindi(14) and could reflect a general

commitment and adherence to the national teaching guidelines on the part of the teachers(14-16). Furthermore, it could also be due to the regular transfer of teachers from urban to rural schools and vice versa in the district. Whereas the current study found that two thirds of teachers had taught something about diet, Nyandindi *et al.*(14) found only a quarter of them teaching this which was found to have been omitted from the syllabus(19). However, a direct comparison between the two studies is limited by differences in study design.

The higher proportion of female teachers engaging in the provision of health education could be explained by the existing sex-role pattern, whereby women generally tend to be concerned with health and health related behaviours than men, sometimes placing perceived health beliefs and values in improving attraction rather than health(20-22). This also could reflect a closer association of women and children in this society in which most of the teachers were married. The higher participation of teachers with primary education could be explained by the fact that oral hygiene instruction is given much emphasis in the teachers' guide to children in grade 1-2(19). Teachers with secondary school education who teach higher grades were less engaged in oral health programmes. The influence of a teacher's age has not been tested in this study. However, there is a need to study this association further. Notably, teachers dealing with lower grades pupils were younger by age and experience, while those aged below 40 years were generally 60%.

In conclusion, oral health education seemed to be given mainly to primary school pupils in lower grades, teachers involved in general and health education provision were mainly females without secondary education, juniors in the profession and generally younger by age. In order to sustain positive oral health in the primary school population, there is a need for influencing teachers of pupils in higher grades and males to be more involved in oral health education programmes throughout their teaching profession.

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