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**Knowledge and experiences of oral health among teacher
students in Livingstone, Zambia**
- a questionnaire study

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Empirical study

100920

Abstract

The aim of the study was to investigate the experience of dental care and oral hygiene, and the knowledge about gingivitis, periodontitis and dental caries among teacher students, in Livingstone, Zambia. Another aim was to investigate whether oral health was included in the curriculum. The study was carried out among teacher students at David Livingstone College of Education. The questionnaire consisted of 32 questions. 150 questionnaires were handed out, an external reduction appeared of 15 questionnaires and altogether 135 students participated in the study. The results showed that 74 of the students had never received dental care, while 59 had received dental care. The main reason why they had been seeking dental care was toothache. Toothbrush and toothpaste were the most common agents used for cleaning teeth. The overall knowledge about oral diseases was good. Most of the teacher students had received information about oral health in previous schools. The teacher students were positive to inform about oral health when they start practicing as teachers but they requested more information and knowledge to be familiar with the topic.

Keywords: Africa, Zambia, oral health, knowledge, experience

**Kunskap och erfarenhet utav oral hälsa bland
lärarstudenter i Livingstone, Zambia**
- en enkätstudie

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Empirisk studie

100920

Sammanfattning

Syftet med studien var att undersöka erfarenheten av tandvård och oral hygien samt kunskap om gingivit, parodontit och karies bland lärarstudenter i Livingstone, Zambia. Ett annat syfte var att undersöka om oral hälsa var en del utav läroplanen. Studien utfördes bland lärarstudenter vid David Livingstone College of Education. Enkäten bestod av 32 frågor. 150 enkäter delades ut, ett externt bortfall på 15 enkäter förekom och sammanlagt deltog 135 lärarstudenter i studien. Resultaten visade att 74 av lärarstudenterna aldrig hade fått tandvård medan 59 hade fått tandvård. Det huvudsakliga skälet till att de hade uppsökt tandvård var tandvärk. Tandborste och tandkräm var de vanligaste hjälpmedlen vid tandrengöring. Kunskapen om orala sjukdomar var i det stora hela god. De flesta lärarstudenterna hade fått information om oral hälsa i tidigare skolor. Lärarstudenterna var positivt inställda till att informera om oral hälsa när de börjar praktisera som lärare, men de efterfrågade mer information och kunskap om ämnet.

Nyckelord: Afrika, Zambia, oral hälsa, kunskap, erfarenhet

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GLOSSARY

Aggressive periodontitis: are distinct types of periodontitis that affect people who, in most cases, otherwise appear healthy. The progression of the disease is rapid. Aggressive periodontitis occurs in localized and generalized forms.

Cancrum oris: a gangrenous disease that leads to tissue destruction of the face, especially on the mouth and cheek.

Chewing sticks: made from roots, twigs or the stem of a plant. Used for cleaning the teeth.

Dental caries: a disease caused by the interaction between microorganisms and fermentable carbohydrates leading to the destruction of the hard tissue on the tooth.

Dental plaque: is a bacteria biofilm that builds up on the teeth.

DMFT: the dental caries prevalence in an individual. Obtained by calculating the number of decayed, missing and filled teeth. A DMFT of 28 is the maximum value, meaning that all teeth are affected.

Gingivitis: an inflammation of the gum tissue which is caused by oral bacteria plaque and may result in periodontitis.

Periodontitis: an inflammatory periodontal destruction of tissue caused by bacteria. It involves progressive loss of the bone and can, if not treated, lead to tooth loss.

INTRODUCTION

Oral health worldwide

According to the WHO, good oral health is defined as “being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity” (WHO Oral Health, 2009). It has been established that a poor oral health negatively affects the rest of the body (Sheiham, 2005).

Oral diseases are among the most common chronic diseases in the world, and are more common in developing countries than in industrial countries. This is due to poor oral hygiene, inadequate dental health care, lack of dental programs and policies, economic stagnation, and a shortage of dental personnel (Goldman et al., 2008; Sheiham, 2005).

The most common oral disease in the world is dental caries (WHO Oral Health, 2009; Murthy & Mohandas, 2010). Dental caries is a problem in the industrial countries and affects 60-90 % of the school children. The majority of adults have dental caries (Petersen et al., 2005). Until recently, the prevalence of dental caries has been low but is now increasing in developing countries. The main reasons are a higher consumption of sugar and a low supply of fluorides (Petersen et al., 2005; Goldman et al., 2008).

The majority of children worldwide shows signs of gingivitis and 50-90 % of adults are affected (Petersen et al., 2005; Pihlström et al., 2005). Oral hygiene is poorer, and gingivitis is more common in all age groups in developing countries compared to industrial countries (Burt, 2005). Gingivitis arises from accumulation of dental plaque and the signs are red and swollen gum with bleeding, especially when brushing the teeth. If not treated it might lead to periodontitis (Coventry et al., 2000).

Periodontitis is the second major oral disease (Petersen et al., 2005). In all populations mild to moderate periodontitis is highly prevalent among adults (Burt, 2005). Worldwide, 5-20 % of adults have severe periodontitis and 2 % of adolescent are affected by aggressive periodontitis (Petersen et al., 2005). Risk factors for periodontitis are smoking, genetics, stress, poor oral hygiene, diabetes and systemic diseases (Burt, 2005).

In order to prevent gingivitis, periodontal diseases and dental caries it is important to remove dental plaque. The most common method of dental plaque remove is the use of a tooth brush. In many developing countries, toothbrushes are rare to find. Instead, different types of chewing sticks are used (Batwa et al., 2006). A difficult area for tooth cleaning is between the teeth, where ordinary toothbrushes are not effective. Toothpicks are one of the oldest aids for cleaning between the teeth, but other aids such as dental floss and interdental brushes are also successfully used (Yankell & Shi, 2002).

It is well established that fluoride is a key agent to prevent dental caries. The most widespread aid used for fluoride is toothpaste and the effectiveness depends upon the regularly use of the product (Jones et al., 2005).

Oral health in Africa

In African countries, dental caries and periodontal diseases are less common and severe than in industrialized countries. There are, however, other major oral diseases that are more common in Africa than in other places, like cancrum oris and HIV/AIDS- related oral diseases (Thorpe, 2003).

The prevalence of dental caries is higher among urban than rural populations in all age groups, and is also higher among women than men. Most adults and children suffer from untreated dental caries related to pain (Varenne et al., 2005). Among children at the age of 6, about 38-45 % have dental caries (Varenne et al., 2004; Postma et al., 2008).

Mild periodontal diseases are frequent among adolescents and adults, while severe periodontal diseases are less frequent (Enwonwu et al., 2004; Varenne et al., 2006). Varenne et al (2006) reported that urban populations are affected more severely by periodontal diseases compared to rural populations. There is hardly any difference between African countries regarding the prevalence and severity of periodontal diseases (Varenne et al., 2006). Many people in Africa have a large amount of dental plaque which results in widespread gingivitis (Van Wyk & Van Wyk, 2004; Kaimenyi, 2004).

Tooth cleaning methods vary from culture to culture. In Africa, chewing sticks have been used for thousands of years and are still used in many African countries, due to tradition,

availability and low cost. Chewing sticks are as efficient as toothbrushes in removing dental plaque (Wu et al., 2002).

For practical and economic reasons, many African populations have little or no access to the caries-preventive benefits of fluoride. It is often difficult for people to afford fluoride products as needed to strengthen the teeth. Despite the use of chewing sticks, oral hygiene is generally poor in a large number of African countries (Enwonwu et al., 2004).

Oral health services in Africa

Many people in Africa are affected by poverty, widespread malnutrition, numerous endemic infections, poor oral hygiene and have little or no access to safe water. All these factors affect oral health (Enwonwu et al, 2004). People's perceptions are likely to be shaped by their previous experiences of oral health services and knowledge about dental care (Leah, 1993).

The use of oral health services in Africa is heavily influenced by economic and socio-cultural factors. Rural areas are particularly at risk, as they have many health needs and problems (Owens & Saeed, 2008). Advances in oral health science have not yet benefitted the poor and underprivileged populations (Petersen, 2008). Many practice self care as an alternative to seeking dental care (Varenne et al., 2006).

Oral health in Zambia

In the eighties, the DMFT among children aged 12 in Zambia was 2.3 and in adults aged 35-44 it was 2.9 (WHO Zambia, 2009). A study by Kabwe (1996), at Ndola Central Hospital dental department, showed that the caries prevalence was increasing rapidly. The levels of dental caries were especially high among children and adolescents. Second to caries in dental diagnoses was periodontitis which was significantly high in males (Kabwe, 1996).

The number of dental personnel in Zambia in 2004 was 491. In addition, the dentist/population ratio is low; approximately one dentist per 290,000 people (Ministry of Health Zambia, 2009). Hagberg and Sjödaahl (2007) reported that 50 % of 201 students in secondary school had visited a dentist. Most of the secondary school students used a toothbrush. The result also showed that 89 % of 201 secondary school students had been informed about oral diseases and oral hygiene, most of them by teachers and parents. Even though most of the students had received information, a lack of knowledge about periodontitis was shown.

Few studies have been performed with regard to oral health in Zambia and they have been made in isolated and selected areas of the community. Therefore they do not give an overall picture of the oral health situation in Zambia (Kabwe, 1996). A need for more studies regarding oral health is seen.

AIM

The aim of the study was to investigate the experience of dental care and oral hygiene, and the knowledge about gingivitis, periodontitis and dental caries among teacher students, in Livingstone, Zambia. Another aim was to investigate whether the subject of oral health was included in the education.

MATERIAL AND METHODS

The study was designed as a structured questionnaire study. Some of the questions from a previous questionnaire were used (Hagberg & Sjödaahl, 2007), but other questions were also added. The study was conducted among teacher students at the local college, David Livingstone College of Education in Livingstone, Zambia during January-February 2010. Contact with the Vice principal, Mr Nyirongo at the local college was handled with help from our supervisor, Dr Mwewa, Dental surgeon at the Dental clinic at the Batoka Hospital in Livingstone.

A pilot study was performed with seven teacher students at the David Livingstone College of Education to ensure that the questionnaire was designed correctly and understood by the teacher students. The Vice principle handed out questionnaires randomly to seven of the teacher students. After answering the questionnaire a discussion between the authors and the respondents followed. The discussion was performed in person in order to identify any adjustments that needed to be made, for example due to cultural aspects. Emendations were made where questions and words were misunderstood. The meaning of oral health was unclear and therefore a definition of oral health was added to the questionnaire. Three questions were added to the purpose of clarifying previous questions. Two questions were excluded as they were in relevant. One question was changed to be clearer. Changes were also discussed with our supervisor in Zambia.

The main study was carried out among teacher students at David Livingstone College of Education. The questionnaire consisted of 32 questions about the students' experience of dental care and oral hygiene, knowledge about gingivitis, periodontitis and dental caries, and previous and present experience of oral health in school. For several of the questions it was possible for the teacher students to mark more than one answer. The questionnaire was written in English (the official language of Zambia). A total of 150 questionnaires were handed out by the Vice principal to a random selection of teacher students. Before the questionnaires were handed out, verbal information was given to the Vice principal by the authors to explain the aim of the study, how it would be carried out and that the respondents' identity would be handled confidentially. The purpose of the verbal information was that the Vice principal would pass the information forward to the teacher students that participated in the study. An external reduction appeared of 15 questionnaires, because they were not returned to the Vice principal. Altogether 135 students participated in the study. When the teacher students were finished answering, the questionnaires were collected by the Vice principal and passed to the authors who stored them in a safety box. The questionnaires have been kept throughout the writing of the essay and will be destroyed when all data have been handled.

In the analysis process of the data an internal reduction occurred in every question. This because of incorrect marking of the questions or no given answer at all. The number of internal reduction varies from 1 to 35 per question. A descriptive method was used to present the collected data. The computer program SPSS 17.0 (Statistical Package of Social Sciences) was used for the statistical analysis of the data.

ETHICAL CONSIDERATION

Respect was shown in the respondents' culture and integrity throughout the whole study. Local manners and recommendations from our supervisor in Zambia have been followed. Ethical principles were taken into consideration (Forsman, 2005). The discussion between the authors and the respondents after the pilot study was important to the main study, since cultural differences and divergent aspects on life could lead to misunderstandings and language barriers. After the questionnaires were collected they were stored in a safety box in order to keep the study confidential. After the data have been handled the questionnaires will be destroyed, in order to protect the teacher students' confidentiality. Their confidentiality

was also protected by the random selection of respondents and it was not possible to trace the answers by looking at the questionnaires.

RESULTS

Personal information

Altogether 135 questionnaires were included in the study and the participants were between the ages of 18 to 38 years. Gender and mean age are divided between the different education years (table 1).

Table 1. Personal information about the students. The data is shown in the total number of students (n).

	Year 1	Year 2	Year 3	All
Male ¹	17	16	33	66
Female ¹	16	30	21	67
Mean age ²	23	23	24	23

¹ an internal reduction of two students (n=133)

² an internal reduction of one student (n=134)

Experience of dental care

Information about how to take care of the mouth and teeth had been received by 101 students (n=134). Information about mouth diseases had been given to 84 of the students (n=132).

Figure 1 presents data concerning from where the teacher students received the information.

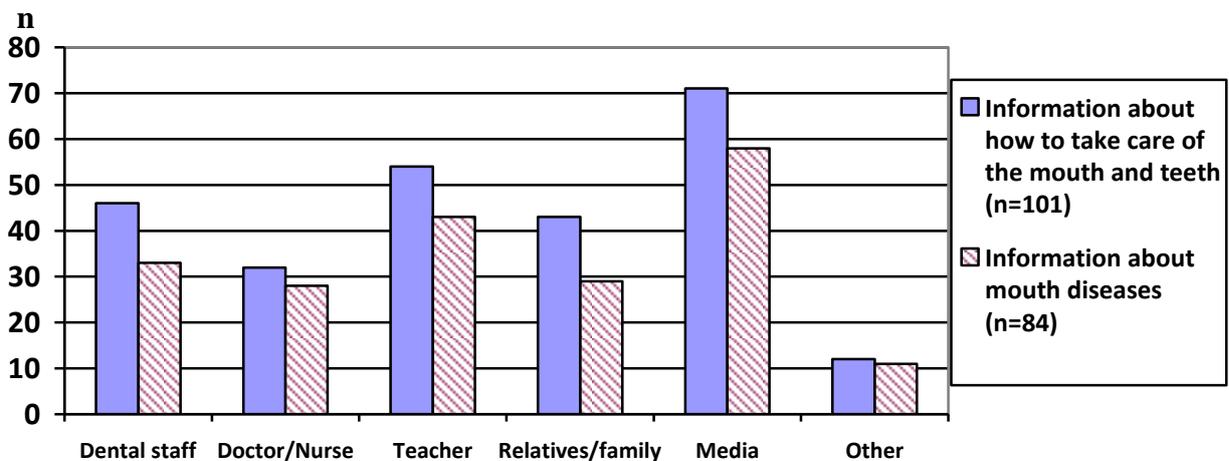


Figure 1. From where the teacher students had received the information. More than one answer could be given.

A total of 74 respondents had never received dental care from dental staff, while 28 students had received dental care one time, nine students twice, six students three times and 16 students had received dental care four times or more (n=133). Within the study group 59 had received dental care. The reason for seeking dental care is shown in Figure 2. Among the respondents that had received dental care (n=58) a number of 28 teacher students had had teeth removed.

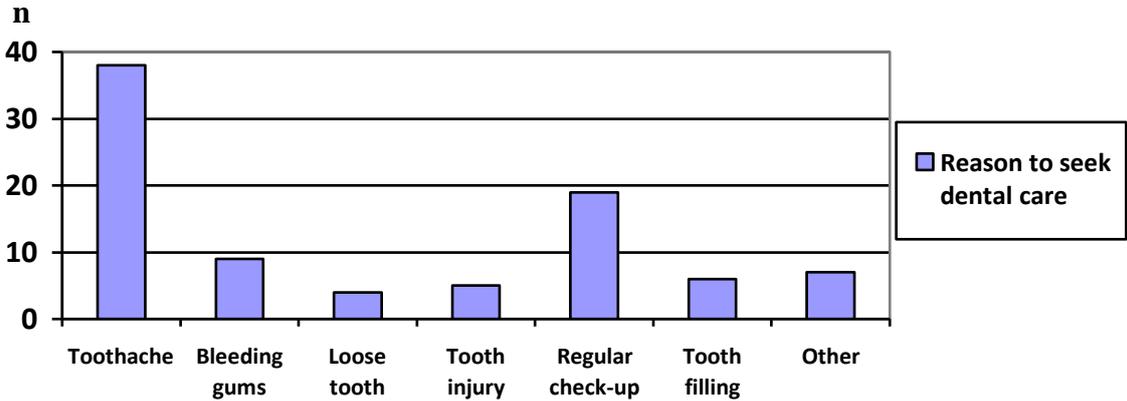


Figure 2. The reason to seek dental care for the students who had received dental care (n=58). More than one answer could be given.

Seventy-two teacher students (n=133) reported problems with their teeth without seeking dental care. The main reason for not seeking dental care given by 40 students was costs, 13 students answered distance and 11 students gave other reasons such as ignorance, poor health care service at the hospital, herbs, medication, milk teeth and that the problem has just started (n=64). In Figure 3, the different kind of dental problems the teacher students had when they did not seek dental care is shown.

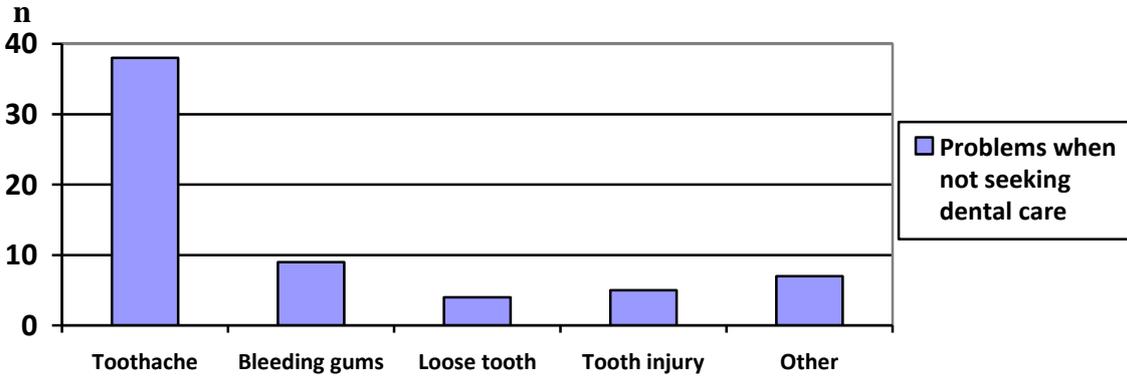


Figure 3. Dental problems among the teacher students who did not seek dental care (n=69). More than one answer could be given.

When having tooth problems, forty-seven teacher students (n=127) had not received any treatment, other than by dental staff. In Figure 4, the number of students who had been given other treatment than by dental staff is shown. Six students answered “other” and gave examples such as by their parents or at home.

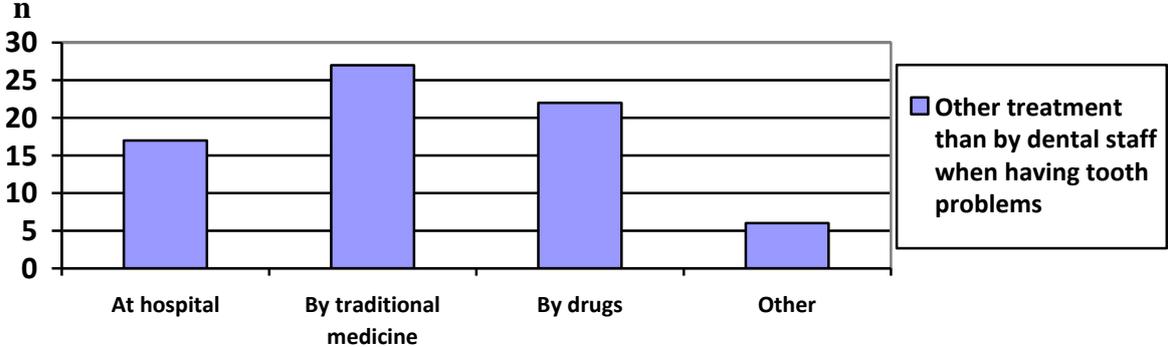


Figure 4. The kind of treatment the students had received other than by dental staff, when having a tooth problem (n=127). More than one answer could be given.

Oral hygiene

A majority, 92 students, cleaned their teeth three times per day or more. Thirty-nine students cleaned their teeth twice a day and three students once a day (n=134). Figure 5 shows at what time of the day they cleaned their teeth. Students that answered “other” gave examples such as, when taking a shower or after sweets and before supper.

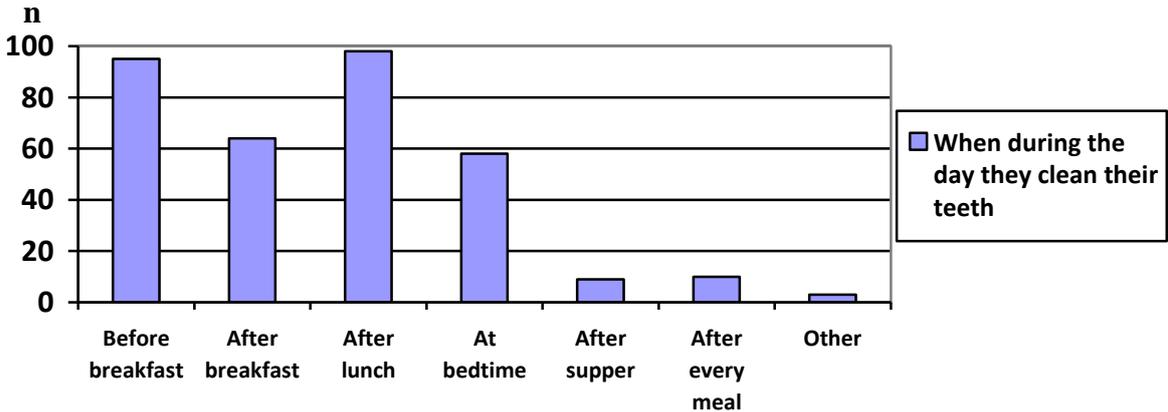


Figure 5. At what time during the day the students clean their teeth. Multiple answers could be given (n=134).

A toothbrush, used by 125 teacher students (n=126) was the most common aid, while one of the students used a chewing-stick. Among the teacher students 126 used toothpaste while two used ashes or coal (n=128). Forty-one students cleaned between their teeth daily, 28 did it weekly, eight students monthly and 57 never cleaned between their teeth (n=134). Within the

study group (n=73) tooth picks were used by 61 students, dental floss by ten and two students mentioned grass and sticks as an aid.

Knowledge

Among the respondents (n=129), 114 students answered that sugar and bacteria can cause dental caries while two students thought it was contagions and 13 students did not know. To the question concerning the reason for cleaning the teeth, 128 students answered that it was to remove bacteria and plaque, while three of the respondents (n=131) did not know the reason. A number of 79 teacher students (n=129) answered that the purpose of fluorides in toothpaste is to strengthen the teeth, while 37 students thought it was to remove stains and 13 did not know. One hundred-seven teacher students answered that bacteria cause gingivitis while four thought it was caused by sugar and 23 did not know the cause (n=134). Twenty-nine students answered that gingivitis could lead to periodontitis, 64 thought periodontitis was caused by dental caries, three students thought it was because of high fluoride concentration and 35 of the respondents (n=131) did not know.

Oral health in school

For the following question multiple answers could be given by the respondents (n=134). Information about oral health had been given to 91 teacher students in primary school and 81 students in secondary school. 22 of the respondents had never received any information about oral health in earlier school years. Figure 6 shows the kind of information about oral health given in earlier school years.

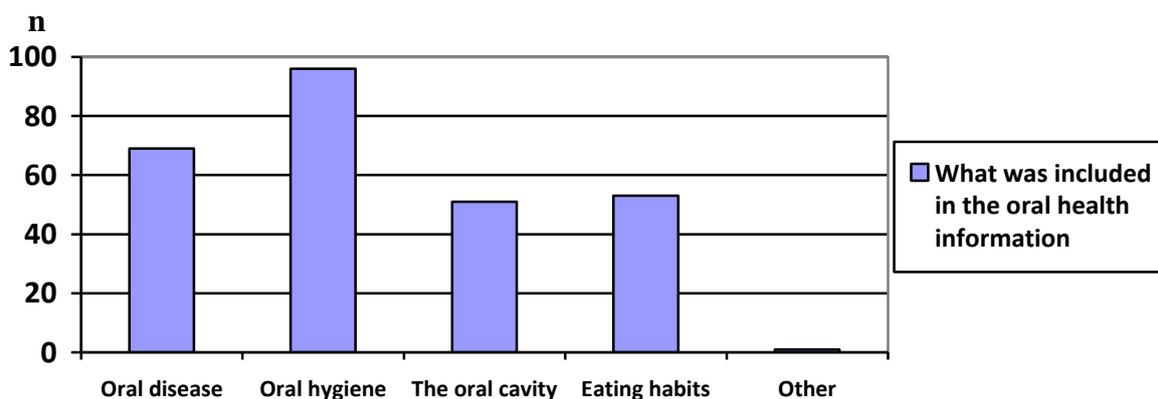


Figure 6. Information given in earlier school years. The students could mark more than one alternative (n=113)

Regarding the question whether they felt that they had enough information about oral health to inform others about it, 89 teacher students (n=128) answered that they did not. Within the

study group (n=131), 44 answered that oral health is included in the teacher education, 64 students answered that it was not included and 23 students did not know if it was a part of their education. The majority, 86 of the teacher students (n=87) wanted oral health to be included in the teacher education. A total of 128 respondents (n=134) answered that they will give information about oral health when they start practicing as teachers. Regarding what they thought was the most important thing to inform about concerning oral health, 81 students answered oral hygiene, ten students answered oral diseases, five answered the oral cavity, two answered eating habits and two answered other (n=100).

DISCUSSION

Material and methods

The original plan was that the authors personally should hand out the questionnaires in the classrooms, to have the opportunity to give information and instruction about how to fill in the questionnaires and be able to answer questions that might arise. The plan also included giving information about the ethical aspects such as anonymity and the voluntary of answering the questionnaire (Forsman, 2005). This was unfortunately not possible because of the teacher students' tight time schedule. Due to the difficulties the Vice principal handed out the questionnaires by himself to the teacher students. Due to the absence of the authors during the hand out of the questionnaires, there was a lack of control over the material. Regarding to the ethical aspects by Forsman (2005) it would have been desirable if the questionnaires were handled by the authors throughout the whole study.

There was an external reduction of 15 questionnaires. The reason might have been that the students did not know they were anonymous, a lack of interest, problem with understanding the questions, or maybe they forgot to return the questionnaires.

In every question an internal reduction that varied between 1 to 35 appeared. The number of respondents answering each question varied, probably due to difficulties to follow the instructions in the questionnaires. Some questions were to be skipped depending on the answer to the previous question which might have been confusing. Because of an increased interest in some of the questions it was possible to write own comments. It might have been easier for the respondents if the questionnaire had been consistent. The reductions might have been fewer if the authors had been in the classrooms during the study. Any question that

might have arisen from the teacher students could then have been answered and the response frequency might have been higher.

A large internal reduction of 35 respondents occurred in question 32, the question was what they thought was the most important thing to inform about regarding oral health. Instead of marking only one alternative which they were supposed to do, many respondents marked more than one. One reason for this reduction could be that the question was unclear and should be more clarified by an instruction that only one answer could be given. This was not brought up as a problem during the pilot study.

Question number 10 should be constructed more specific, for example “Have you had any teeth removed at a dental clinic?” instead of the current question “Have you had any teeth removed?”. Whether the students had had teeth removed at a dental clinic or somewhere else is impossible to know. The students could have different interpretations about the question, such as the removal of a milk tooth at home or a tooth had been lost due to an injury. Therefore no conclusion can be received regarding the question at the moment.

Results

A good knowledge is seen about what causes dental caries due to those 144 students that answered it was caused by sugar and bacteria. According to WHO Oral Health (2009) dental caries is the most common oral disease in the world, which could be one explanation for that the information given by previous teachers and media have focused on dental caries when giving information about oral diseases.

Only twenty-nine students knew that gingivitis could lead to periodontitis. Similar result is shown in a study made in Sweden (Hedman et al, 2006) where only 15 % of 793 young adolescents knew the meaning of the word periodontitis. This shows that there is a lack of knowledge regarding periodontitis in both countries. The reason for the poor knowledge can depend on different things. One reason could be that periodontitis not have been as exploited, especially in media, as dental caries. Another explanation could be the respondents young age as the disease often develops later in life.

Half of the teacher students had never received dental care and the same number of teacher students had experienced problems with their teeth without seeking dental care. In a previous

study made in Livingstone, Zambia, (Hagberg & Sjö Dahl, 2007) performed on secondary students, similar results are shown. There is no difference regarding dental care habits in these two age groups. The main reason for not seeking dental care for many of the teacher students was costs. This is not surprising because of widespread poverty and the high prevalence of life-threatening diseases such as HIV/AIDS, tuberculosis and malaria (Varenne et al., 2005). Therefore dental care might not be given a high priority.

Only 19 of the students went on regular check-ups at a dental clinic. Most common was to seek dental care when they experienced a dental problem, where toothache was the most common problem. A study made by Thorpe (2006) demonstrates that preventive or restorative dental care is not given a high priority in Africa.

Oral hygiene habits were overall good but many of the students did not know the purpose of fluorides in toothpaste, even if almost everyone used it daily. This is similar to results of other studies (Ismail et al., 1997; Hagberg & Sjö Dahl, 2007). A possible explanation could be that the use of toothpaste was not frequent until recent years. A study shows that there is a limited access to fluorides in Africa (Enwonwu et al., 2004), which could be another reason for the lack of knowledge.

A large interest is shown by the teacher students in including oral health in the teacher education. Oral health has earlier been part of the teacher students' curriculum but is now removed from the education, personal communication with Mr Nyirongo (2010). It is a positive response that the teacher students want to have knowledge about oral health and show an interest. Varenne et al (2006) reported that it is important to inform teacher students about oral health, because they play an important role in improving the oral health status.

Most of the teacher students' information about oral hygiene and oral diseases is received from media and school teachers. A study made in Livingstone (Hagberg & Sjö Dahl, 2007) shows similar results. Teachers are important informants about the subject and it is a positive response that most of the students will inform about oral health when they start practicing as teachers, which is similar to the result from a study made in Portugal where teachers believe that dental hygiene education is important for students' well-being (Assunção et al., 2008).

CONCLUSION

The study shows that half of the students had suffered from toothache but the attendance to dental care is low. Information had been given to most of them in earlier school years, especially about oral hygiene. The teacher students want to inform about oral health when they start practicing as teachers but feel that they have a lack of knowledge about the subject. A need for more information about periodontitis is seen

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1. Questionnaire about oral health.

Definition of oral health:

With oral health we mean everything that concerns the mouth area: the teeth, the gums, the tongue, the cheeks etc. This includes the oral hygiene, oral diseases and eating habits.

Mark one alternative per question if no other instruction is given.

Please fill in all questions.

Personal information

- 1 Gender
 - Male
 - Female
- 2 Age: _____ years
- 3 How far have you come in your education?
 - First year
 - Second year
 - Third year

Experience of dental care

- 4 Have you received any information about how to take care of your mouth and teeth?
 - Yes
 - No

If you answered “No” to this question please go to question 6

- 5 From whom did you receive this information?
(You can mark more than one alternative)
 - Dental staff/Dentist
 - Doctor/Nurse
 - Teacher
 - Relativs/family
 - Media (TV, books etc.)
 - Other

- 6 Have you received any information about mouth diseases?
 - Yes
 - No

If you answered “No” to this question please go to question 8

- 7 From whom did you receive this information?
(You can mark more than one alternative)
 - Dental staff/Dentist
 - Doctor/Nurse
 - Teacher
 - Relativs/family
 - Media (TV, books etc.)
 - Other
- 8 How many times have you received dental care by dental staff?
 - Never
 - 1 time
 - 2 times
 - 3 times
 - 4 times or more

If you answered “Never” to this question please go to question 11

- 9 If you have received dental care, what was the reason?
(You can mark more than one alternative)
 - Toothache
 - Bleeding gums
 - Loose tooth
 - Tooth injury
 - Regular check up
 - Tooth filling
 - Other
- 10 Have you had any teeth removed?
 - Yes
 - No
 - I don't know

11 Have you ever had any problems with your teeth without seeking dental care?

Yes

No

If you answered “No” to this question please go to question 14

12 What was your main reason for not seeking care?

Distance

Costs

Other: _____

13 What kind of problem did you have when you didn't seek dental care?

(You can mark more than one alternative)

Toothache

Bleeding

Loose tooth

Tooth injury

Other

14 Have you had any treatment, other than by dental staff when having tooth problems?

(You can mark more than one alternative)

No, I haven't had any treatment

Yes, at hospital

Yes, by traditional medicine

Yes, by drugs

Other: _____

Oral hygiene

15 How often do you clean your teeth?

Never

Rarely

1 time/day

2 times/day

3 times/day or more

If you answered “Never” to this question please go to question 21

16 When during the day do you clean your teeth?

(You can mark more than one alternative)

Before breakfast

After breakfast

After lunch

At bedtime

Other: when _____

17 What do you mainly use for cleaning your teeth?

Toothbrush

Chewing-stick

Finger

Other: what _____

18 What do you mainly use of the following, when cleaning your teeth?

Toothpaste

Salt

Ashes/coal

Other: _____

19 Do you use anything regularly to clean in between your teeth (for example dental floss)?

Yes, daily

Yes, weekly

Yes, monthly

No, never

If you answered “No, never” to this question please go to question 21

20 What do you use for cleaning between your teeth?

Dental floss/string

Tooth picks

Other: _____

Knowledge

- 21** What causes tooth cavities (dental caries)?
- Sugar and bacteria
 - Tobacco
 - It is contagious
 - I don't know
- 22** What is the main reason for cleaning our teeth?
- Whiten the teeth
 - Remove bacteria and plaque
 - Massage the gums
 - I don't know
- 23** What is the purpose of fluorides in toothpaste?
- Remove stains from the teeth
 - Strengthen the teeth
 - Making the gums soft
 - I don't know
- 24** What causes swollen and bleeding gums (gingivitis)?
- Tobacco
 - Bacteria
 - Sugar
 - I don't know
- 25** What can lead to tooth loss (periodontitis)?
- Gingivitis (swollen, bleeding gums)
 - Dental caries (tooth cavity)
 - High fluoride concentration
 - I don't know

Oral health in school

- 26** Have you received any information about oral health in earlier school years?
(You can mark more than one alternative)
- Yes, at primary school
 - Yes, at secondary school
 - No

If you answered "No" to this question please go to question 28

- 27** What was included in the oral health information?
(You can mark more than one alternative)

- Oral disease
- Oral hygiene
- The oral cavity
- Eating habits
- Other: _____

- 28** Is the subject of oral health included in the teacher education?
- Yes
 - No
 - I don't know

If you answered "Yes" to this question please go to question 30

- 29** Do you think oral health should be included in the teacher education?
- Yes
 - No

- 30** Do you feel that you have enough information to inform others about oral health?
- Yes
 - No

- 31** Will you inform about oral health when you start practising as a teacher?
- Yes
 - No

32 What is most important to inform about regarding oral health?

- Oral hygiene
- Oral diseases
- The oral cavity
- Eating habits
- Other: _____

Thank you for participating!