

National pathfinder survey of dental caries prevalence and treatment needs in The Gambia, the age group 35 - 44 years.

Cecilia Blom and Maria Carlsson

Tutor in Sweden: Karin Sunnegårdh - Grönberg Dr.Odont, PhD

Tutor in The Gambia: Jette Lehrmann Madsen, DDS

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Abstract

Aims: To assess caries prevalence and dietary/oral habits in The Gambia, the age group 35 - 44 years, according to WHO criteria. The study is thought as an additional follow up to the one conducted by Adegbembo et al.

Materials and methods: The study design is an epidemiological cross-sectional study. The participants were divided into groups based on their demographic belongings. This resulted in Urban/City, Urban/Town and Rural/Village. The study comprised a clinical examination and a questionnaire concerning oral hygiene and dietary habits. The number of people examined was 294.

Results: The caries prevalence recorded for all the areas was 86.7%. There was a difference between Urban/City (75.5%) and the other two areas (Urban/Town, 92.2% and Rural/Village 93.1%). Caries prevalence was higher among women than men, 95.7% resp 75.9%. The mean DMFT recorded for all the areas was 7.06 ± 5.64 SD. Unmet treatment need (DT/DMFT) was 88.0%. This result was higher than the one confirmed by Adegbembo et al which was 71.0%.

Conclusions: There were significant differences in DMFT between Urban/City - Urban/Town and Urban/City - Rural/Village but not between Urban/Town - Rural/Village. There were also significant differences in DMFT between men and women.

Introduction

The republic of The Gambia is located in Western Africa bordering Senegal and the Atlantic Ocean. The country's area is 11 300 km² and has about 1. 6 million inhabitants (1) which can be compared to the region of Skåne (11 027 km² and 1. 1 million inhabitants (2)). The Gambia is divided into the following divisions; Banjul, Western division, North Bank division, Lower River division, Central River division and Upper River division (Fig 1).

The capital city, Banjul, is located on the coast. Approximately 26 % of the population is situated in the coastal areas where the biggest city is called Serrekunda (3). The official language is English since The Gambia used to be a British colony. This is widely spoken in the coastal areas but not as much up-river. Other languages are Mandinka, Fula, Wolof and Jola (3).

The annual growth rate for the population is 4. 1 % (4). The population is young where 44 % is below the age of 15 (4). The major ethnic groups in the country are Mandinka (42 %), Fula (16 %), Wolof (16 %), Jola (10 %), Sarahule (9 %), Aku (1 %) and others (6 %) (4). These groups are almost equivalent to the ones in neighbouring parts of Senegal. Of tradition the Mandinka are farmers, the Fula are cattle-tenders and Wolof are traders. However, because of urbanisation the old patterns have faded and people have moved to the coast (3). The population consists of 90 % Muslim and 10 % Christian or indigenous beliefs (2).

GDP per capita is 1288 Int Dollars (2004) of which 8. 1 % (2003) go to total health expenditure (5). The life expectancy at birth is 55 years for men and 59 years for women (5). Compared to other African countries The Gambia has a low number of HIV/AIDS. In the year 2001 1. 6 % of the adult population carried this deadly disease (3).

Other more common infectious diseases with potentially deadly outcomes are malaria and tuberculosis.

According to Lars-Göran Wörn (the owner of the private practice Swedent clinic, Kotu) at present 13 dentists supply the citizens with professional healthcare. The clinics are foremost situated in the coastal areas. As in most other countries there are government owned practices and private ones. In The Gambia there are few clinics where the majority are privately owned. They are owned either by native Gambians or foreigners from Western countries. Most people can not afford dental care. However, those who can prefer Western standards so the private clinics owned by the native Gambians do not have a great turnover resulting in them not being open throughout the whole day. Those clinics are therefore not utilized to their whole capacity which leads to them not being able to afford enough equipment and personnel. The government tries to solve the shortage of dentists in the country by recruiting staff, often from abroad, to work at the hospitals' dental clinics. They can provide dental care for a small amount of money and are therefore overstrained leading to tremendous queues where not everyone is guaranteed treatment. As a consequence people seek help only in emergencies. The reason for the hospitals being able to provide inexpensive care is that the government subsidizes the treatment. Cooperation between the government and the private clinics could ease the strain on the government owned clinics and provide more people with dental care. Another problem that the private clinics are faced with is that the work that they require i.e. prosthetics et.c has to be sent to dental technicians abroad, for example USA or Asia. Most of the time this works quite well but it is often an advantage when things can be produced nearby. Also equipment such as filling materials et.c can not be bought in The Gambia but must be imported from other countries. Sometimes the clinics have to wait for weeks up to months for supplies. The government owned clinics do not have this problem to the same extent due to the fact that the most common treatment that they perform

is tooth extraction since it is the cheapest. This also creates a big burden on the private practices.

Recent data concerning oral health in The Gambia is rare. However, as other low income countries in Africa, The Gambia's oral health situation has declined over the years (4). There has been a great change in dietary habits where traditional foods and beverages have been replaced with cheap imported ones containing higher levels of sucrose and carbohydrates (6). The sugar consumption has increased and was 38.0 kg per person and year (2002), which is considered to be one of Africa's highest (7). In Africa the consumption of sugar is often an indication of the country's wealth. This is well illustrated when looking at Rwanda's consumption which is 1.2 kg per person the same year (1). Comparing developing countries to industrial countries in this matter is difficult considering that the latter has totally different prerequisites for managing with the issues connected with a high consumption of sugar. The prevalence of diabetes was in the year 2000, 22 000 people. The WHO predicts that the number will triple to the year 2030 (5).

In 2000 a study was conducted in The Gambia according to WHO criteria concerning caries prevalence (4). The results showed that 84 % in the age group 35 - 44 years was affected with caries and 67 % of the 12 - year olds. Students from the Karolinska Institute, School of Dentistry, conducted a follow up study in 2003 regarding only school children in The Gambia, supervised by our co-tutor Jette Lehrmann-Madsen, (8) and they could confirm the results from Adegbembo et al (4). The aim of this survey is to assess dental caries prevalence and dietary and oral habits in the selected age group of 35 - 44 years, according to WHO criteria (9). There was also an interest of the awareness and knowledge in the population about the connection between dietary and oral habits regarding oral health. Our hypothesis is that caries is equally frequent independent of gender and living area. The study is thought as an additional follow up to Adegbembo et al where the adult population of the

age group 35 - 44 years is looked into with greater detail. The survey took six weeks to perform.

Materials and methods

The study design is an epidemiological cross-sectional study. The settlements have been chosen by the authors according to WHO guidelines (9). The reason for selecting these specific places was that our tutor Jette Lehrmann Madsen had connections there and that the study was conducted during the raining season making certain areas inaccessible. This resulted in most areas being situated by the coast. The chiefs of the towns and villages and the people responsible for the areas in the cities, where the examinations were to take place, were informed in advance to select the adequate amount of participants before the operators' arrival. However, this was not always the case and many times people had to be selected off the streets. The study comprised a clinical examination and a questionnaire concerning oral hygiene and dietary habits.

Subjects

Table 1 shows the areas according to WHO guidelines (9). The participants were divided into groups based on their demographic belongings (9).

Clinical examination

The examinations were carried out by three operators (Cecilia Blom, Maria Carlsson and Jette Lehrmann Madsen) and calibration exercises were carried out prior to study start. The examination took place outside in the daylight sitting on ordinary chairs with a plane mouth mirror. In total 294 people of the ages 35 - 44 years were examined (9).

In the intra oral examination the number of sound-, decayed-, filled- and missing teeth were registered and also if the participant had had any prosthetic work done. The length and weight of each participant was recorded and notes on angular cheilitis and hair colour

were also taken. Findings were recorded according to Fig 2. Treatment need was then calculated by dividing the caries prevalence (DT) with the caries experience (DMFT), DT/DMFT (4). To minimize spread of infection hygiene procedures were undertaken. All instruments required for examination and extraction were disinfected between participants and at the end of each day the instruments were cooked in boiling water. Subjects' rights have been protected by an appropriate Gambian institutional review board and informed consent was granted.

Interview

After the intra oral examination the participants were interviewed using a fixed multiple choice questionnaire (Fig 3) concerning their dietary and oral health habits as well as their knowledge on oral health. The head nurse of Swedent clinic functioned as a local translator during the interview. The questionnaire was divided into three parts. The first one concerned dietary habits, the second, oral habits and the third attitudes towards dental care. The questions about dietary habits included number of meals per day and the consumption of sweet beverages and foods. Questions on oral habits concerned type of tool to clean teeth with (chewing sticks were included) and number of times a day. The part on attitudes asked whether they visited the dentist, for what reason and how often. It also included the participants' view of their own teeth and gums and whether or not they thought the dentist played an important role in health care.

Fluoride sampling

When visiting the different settlements water samples were taken. The samples were obtained from wells and communal systems depending of what kind of water supply system the

settlement had. These samples were kept cool until arrival in Sweden. They were sent to the laboratory at the Dental School, Umeå for fluoride analysis.

Statistical methods

The data has been analysed according to the Statistical Package for Social Sciences, version 13.0 (SPSS, Chicago, USA). Differences between DMFT, gender and specific areas were statistically analysed by Oneway ANOVA, Scheffes test and the independent T-test. The level of significance was set at $p = 0.05$.

Results

Results of the clinical examination

The caries prevalence recorded for all the areas, in the age group 35 - 44 years, was 86.7 %. There was a difference between Urban/City (75.5 %) and the other two areas (Urban/Town, 92.2 % and Rural/Village 93.1 %). When comparing area and gender the same patterns could be seen. Generally caries prevalence was higher among women than men, 95.7 % resp 75.9 %, (fig 4).

The mean DMFT recorded for all the areas was 7.06 ± 5.64 SD. DMFT differed between the areas; Urban/City 5.00 ± 4.59 SD, Urban/Town 8.44 ± 6.19 and Rural/Village 7.91 ± 5.54 SD. DMFT was higher among women than men 8.83 ± 6.01 SD resp 4.93 ± 4.28 SD, (fig 5). Significant differences could be seen for DMFT between Urban/City - Urban/Town and Urban /City - Rural/Village but not between Urban/Town and Rural/Village. A significant difference was also seen in DMFT between men and women. Unmet treatment need (DT/DMFT) was 88.0 %.

The prevalence of fillings and prosthetics were low, 3.4 % resp 8.5 %. Fillings were almost as common for women as for men, 1.0 % resp 2.4 %, whereas prosthetics were more frequently seen in women than men, 12.4 % resp 3.8 %, (fig 6 and 7).

Results of the questionnaire

From the people who participated in the questionnaire 93.2 % ate three meals/day, (fig 8). After finishing a meal 77.9 % always rinsed their mouths with water, (fig 9). The number of people that brushed their teeth once to several times a day was 87.1 %, (fig 10). When it came to type of oral hygiene tool differences could be noted between areas. When looking at the total, 41.2 % used local chewing sticks, 40.8 % used imported plastic toothbrushes,

16.0 % used both, 0.3 % used no tool at all and 1.7 % was not applicable. Results showed that it was more common to use an imported plastic toothbrush in Urban/City (54.9 %) than in Urban/Town (25.6 %) and Rural/Village (40.2 %) and vice versa concerning local chewing stick, Urban/City (23.5 %), Urban/Town (57.8 %) and Rural/Village (44.1 %), (fig 11).

From the examined 94, 2 % did not visit the dentist for a regular check-up, (fig 12), 65.6 % had never visited a dentist, 28.9 % only when having experienced toothache and 5.0 % once to several times a year, (fig 13). The amount of participants that had experienced toothache once to sometimes within the last twelve month was 45.9 %. The number of people that had had toothache often within this period of time was 12.6 %. More than 40 % (41.5 %) did not know when they last had a toothache, (fig 14). When it came to the participant's evaluation of own teeth and gums, 59.2 % considered themselves to have good oral health, 17.7 % thought it was average and 23.1 % considered their oral health to be bad, (fig 15). Among the examined participants 99.7 % considered a dentist's and a medical doctor's work to be equally important, (fig 16).

When analyzing the results certain questions were excluded. Question 2 and 3 were discovered to be wrongly formulated. When asking the participant if he/she ate sweet things the person answered from the alternatives given i.e. chocolate, mints and ice cream. Other sweet things like biscuits and cakes were not considered unless specifically asked for. The same thing applied for question 3 when asking about consumption of soft drinks. The question should have been differently formulated since the consumption of attaya (local sweet tea) was great. It would have been better to ask the person how often he/she consumed sweet drinks and not soft drinks. Question number 7 was excluded due to different interpretations among the operators and translators. By some the question was interpreted as "if you do not

use a toothbrush or a chewing-stick at all what do you use to wash your teeth?” and by some “when you do not use a toothbrush or chewing-stick what do you use to wash your teeth?”

One of the aims of the study was to record each participants length and weight. This was however not feasible since other more important things were time consuming and therefore higher prioritised. An estimation was made but since statistical research can not be carried out on approximations this information was left out.

Angular chelitis and black hair with a red tone are signs of malnutrition. This was not seen in any of the participants and was therefore excluded in the results.

The results from the water samples showed that fluoride concentration in the drinking water ranged between less than 0. 01 and 0. 07 ppm (mg/l).

Discussion

As has been mentioned earlier our hypothesis was that caries does not differ between gender and different areas and that this is a follow-up study to the one conducted by Adegbenbo et al (4). Their results showed an 84.0 % occurrence of caries which is similar to ours, 86.7 %. Significant differences could be seen for DMFT between the different areas and gender.

Caries prevalence and treatment need in The Gambia is high due to many factors. The most significant reason is that the country still struggles with developmental and economical issues. Lack of dental personnel, material and dental schools makes dental care a great expense for both the government and the country's inhabitants. Since visits to a dentist are expensive, people tend to go only in case of emergency. Other depending factors are the increase in consumption of food and drinks containing high levels of sucrose and carbohydrates and that the use of good oral hygiene equipment is limited. When using the term equipment both toothbrush, fluoridated toothpaste and other fluoride products is implied. The knowledge of oral hygiene and health is poor. Also people lack the awareness of the negative effects of sugar.

A problem faced through out the study was to collect the right number of participants. Of the people that turned up for the examination most experienced dental problems with symptoms. Many of those without symptoms did not understand the value of participating and therefore declined when asked. The aim with the study was not only to examine people with dental problems with symptoms but to be representative of The Gambian population. The number of participants could also be low due to the fact that oral anxiety is high.

The results show that there are differences between Urban/City - Urban/Town and Urban/City - Rural/Village but not between Urban/Town - Rural/Village concerning

caries prevalence. This can be due to several factors. The areas that were chosen agree with the guidelines from the WHO even though most areas were situated by the coast. The reason for this is that our tutor had connections there and gathering people was made easier. The definition “city” in The Gambia does not imply an area where most parts of the population live as for example a city in an industrialised country. More important for a city is the degree of development rather than the number of inhabitants. The cities are strongly influenced by Western standards i.e. cell phones, computers and cars are common. However, what is important to remember is that development still is slow. Most people in The Gambia do not have running water and electricity. Also the road conditions are poor. Therefore the cities in the study are not necessarily the largest. The towns and villages are not as influenced by Western ways. People there live more according to tradition even though they of course are affected by the cities. The weather was also a depending factor. Since we were there during the raining season roads were often flooded and therefore certain areas were not easily accessible. Another reason is that in developing countries random sampling is often not possible due to lack of census lists or valid population registers (10, 11). This also creates a problem when it comes to estimating people’s age. Mostly age could not be confirmed only approximated since ID documentation is rare. Due to this the age factor is a source of error (10, 11). Studies in The Gambia on the age group 35 - 44 years are not easily conducted since it is an underrepresented group. As has been mentioned before 44. 0 % of The Gambia’s population is under the age of 15 years. Since unemployment is high many of the 35 - 44 year olds travel abroad to work. Of the ones that remain many work hard to provide the family financially and therefore did not have time to participate in the study.

Further results show that there is no difference in caries prevalence between men and women in Urban/City. However there are gender differences in Urban/Town and Rural/Village. Reasons for this could be that women in Urban/Town and Rural/Village often

do not have the same possibilities to education as women in Urban/City. Cities are more developed and therefore more equal when it comes to men and women's rights, more women work and handle their own money. For the women outside the cities dental care is not a high priority since the men are often away on business giving the women a high workload. Since the men are away for great periods of time the women do not get a chance to visit the city and the dentist but have to stay at home and take care of the house and land. The statements above may be reasons for the skewed distribution of men and women in the study. This is also a source of error. When analysing DMFT with gender there were significant differences between all areas. This can also be confirmed in a study from Burkina Faso, Africa (10). Calculated unmet treatment need (DT/DMFT) was 88.0%. This result was higher than the one confirmed by Adegbembo et al which was 71.0%.

The prevalence of prosthetics is generally low. Women tend to have more prosthetic treatment done than men. It is possible that aesthetics is more important for women than men. Also people living in Urban/City have more prosthetics than Urban/Town and Rural/Village. This can also be due to aesthetic reasons. Prosthetics as a therapy is not common since The Gambia does not have a great number of their own dental technicians. Most prosthetic jobs have to be sent overseas. All dental materials have to be imported. Also it is a question of lack of knowledge and information as well as financial measures. When it comes to prevalence of fillings the same issues and problems can be implicated.

When comparing DMFT in The Gambia with DMFT in Sweden (12) differences can be seen in the studied age group. Comparisons show that DMFT is higher in Sweden than in The Gambia. This is however not entirely true since DMFT is less accurate than DMFS. When comparing DMFS (12) between the countries DMFS is higher in the Gambia than in Sweden. These figures are somewhat misleading since examination methods differ between the countries. If radiographic examination had been used in The Gambia DMFT/DMFS

results would probably be considerably higher. Therefore the results in the study should be interpreted with caution. Approximal dental caries was only registered when manifested clinically. It is likely that DMFT values would be higher if radiographic examination had been used. Also the examiners might have affected the results of the clinical registration since two of the operators were fourth year dental students. Calibration exercises were carried out prior to study start. However, the WHO recommended level of inter examiner reliability in registration of dental caries was not checked since its existence was not known to the conductors of the study (5).

When comparing fluoride concentration in The Gambia with for example Umeå it can be noted that levels are lower 0.01 - 0.07 ppm (mg/l) compared to 0.21 – 0.26 ppm (13). The fluoride levels differ depending on the climate. During the raining season the fluoride concentration in the water is lower than during the dry season due to dilution (14, 15). Our results can be compared to measurements done 1988 - 89 by Lars-Göran Wärn (personal communication) which also were low. No caries reducing effect can be obtained with such low fluoride levels. Because of the hot climate the Gambians consume great quantities of fluid including the traditional Attaya which is a tea containing a great deal of sugar. The tea plant contains a lot of fluoride and studies are under progress to evaluate if it has a caries reducing effect. If this is the case this sort of tradition could be a good way of providing the population with caries prophylaxis with the condition that the vast amount of sugar that is used has to be reduced (16). Regarding caries prophylaxis it was noted that fluoridated toothpaste is not as widely accessible in The Gambia as in industrialised countries. When looking back upon the questionnaire maybe it would have been wise to ask the participants if they used toothpaste when cleaning their teeth with a toothbrush. This has for example been implicated in a study which took place in Burkina Faso, Africa (17).

The dental caries situation in The Gambia needs serious attention. Since the country lacks resources and oral health is one of the lowest health priorities it is important to deal with this issue. There is a great absence of information and knowledge concerning oral health and treatment, preventative measures and sugar's role in caries development. Emphasis has to be put on educating dental personnel. By this we mean not only dentists but to train people that can spread knowledge within the population. This is advocated by the WHO. Nurses and teachers could be further educated to show people the basics on how to achieve good oral health i.e. what tool to use to clean their teeth, how and when to use it, the importance of fluoride and what food and drinks that are "good" and "bad" from an oral perspective. This could be done as a first step in achieving independent control over the dental situation in the country. A study conducted in Gazankulu showed that knowledge among nurses and schoolteachers was inadequate, motivation appeared high and attitudes towards oral health programmes were generally favourable (18, 19). A next step would for example be to facilitate for Gambian students to go abroad to be educated as dentists, dental hygienists and nurses. After that more clinics have to be built and annual check-ups introduced.

The most valued favour that we as industrialised countries could offer developing countries concerning oral health is guidance in how to help them build a system that encourages good oral health through education and prevention strategies. The Gambia can not afford to wait until it has sufficient dental manpower or more epidemiological data (20).

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Tables

Table 1.

The table describes the total number of participants and how they are divided into each settlement. It also shows the type of area that the settlements belong to.

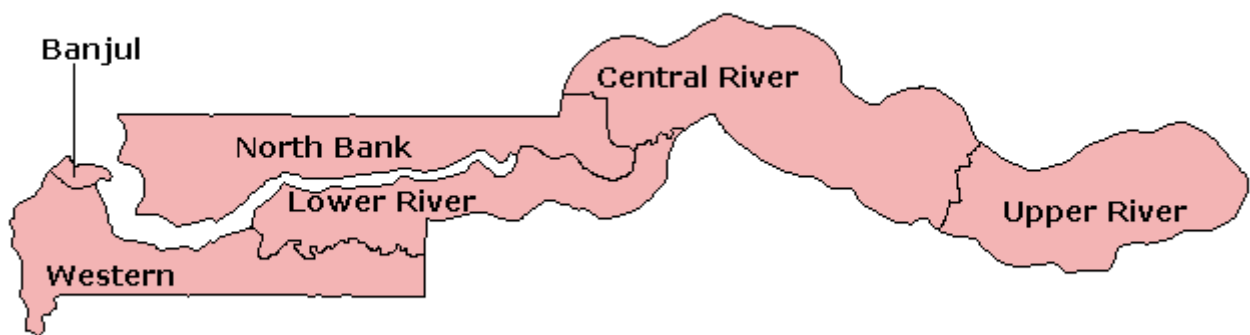
No of participants (n=)	Settlement	Area
n = 77	Banjul	Urban/City
n = 25	Bakau	Urban/City
n = 40	Soma	Urban/Town
n = 50	Brikama	Urban/Town
n = 26	Koloro	Rural/Village
n = 25	Kafuta	Rural/Village
n = 26	Basori	Rural/Village
n = 25	Old Yundum	Rural/Village
Tot n = 294	8	3

Figure legends and Figures

Figures belonging to the examination

Fig 1.

The figure shows The Gambian divisions.



The figure is taken from www.wikipedia.org, February 2007.

Fig 2.

The figure shows the recording form for the intra oral examination.

Modified oral health assessment form, Malmö Version.

Malmö University, Department of Cariology, SE-205 06 Malmö, Sweden; Version WHO CC 02/DB; html/GLT

Name _____ Date _____ 20____

Area _____ Ident. Numb. _____

Age ____ Boy [] Girl [] Examiner _____ Recorder _____

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	<table border="1"> <tr><td colspan="2">Permanent</td></tr> <tr><td>0</td><td>sound</td></tr> <tr><td>1</td><td>decayed</td></tr> <tr><td>2</td><td>filled & decayed</td></tr> <tr><td>3</td><td>filled, no decay</td></tr> <tr><td>4</td><td>missing due caries</td></tr> <tr><td>5</td><td>missing, other reason</td></tr> <tr><td>6</td><td>sealant</td></tr> <tr><td>7</td><td>bridge abutment, crown</td></tr> <tr><td>8</td><td>unerupted</td></tr> <tr><td>9</td><td>excluded</td></tr> </table>	Permanent		0	sound	1	decayed	2	filled & decayed	3	filled, no decay	4	missing due caries	5	missing, other reason	6	sealant	7	bridge abutment, crown	8	unerupted	9	excluded
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DMFT: D _____ M _____ F _____ = _____

DMFS: D _____ M _____ F _____ = _____

Approximate length:

Approximate weight:

Angular cheilitis:

Hair (red to black):

Fig 3.

The figure shows the questionnaire concerning dietary and oral habits.

Survey of dietary and oral habits**Dietary habits:****1. How many meals do you eat a day?**

- i) 1 meal a day:
- ii) 2 meals a day:
- iii) 3 meals a day

2. How often do you eat sweet things? For example, chocolate, mints, ice cream, etc.

- i) Every day
- ii) Almost every day
- iii) Many times a day
- iv) Sometimes
- v) Once a week
- vi) Twice a week
- vii) Never

3. How often do you drink soft drinks? For example, coca-cola, fanta, sprite, *wonjo* juice, orange juice, etc.

- i) Every day
- ii) Almost every day
- iii) Many times a day
- iv) Sometimes
- v) Once a week
- vi) Twice a week
- vii) Never

Oral habits

4. Do you wash (rinse) your mouth with water after meals?

- i) Always
- ii) Sometimes
- iii) No

5. How often do you brush your teeth?

- i) Once a day
- ii) Twice a day
- iii) More than two times a day
- iv) Once a week
- v) Twice a week
- vi) Sometimes
- vii) Never

6. What type of toothbrush do you use?

- i) Local chewing stick
- ii) Imported plastic toothbrush

7. If you do not use a toothbrush or chewing stick, how do you wash your teeth?

- i) I use my index (pointer) finger
- ii) I just wash (rinse) my mouth with water

8. Do you visit a dentist for a check-up of your teeth?

- i) Yes
- ii) No

9. How often do you visit a dentist for a check-up of your teeth?

- i) Once a year
- ii) Twice a year

- iii) More than two times a year
- iv) Only when I have tooth ache
- v) Never

10. When was the last time you visited a dentist for a check-up of your teeth? For example, general check-up, cleaning of your teeth, other dental work.

- i) One month ago
- ii) Six months ago
- iii) One year ago
- iv) One year six months ago
- v) Two years ago
- vi) More than two years ago
- vii) I do not know
- viii) I never visit a dentist

11. During the past year (twelve months), how often have you had a tooth ache?

- i) Once
- ii) Twice
- iii) More than two times
- iv) Very often
- v) Sometimes
- vi) I do not know
- vii) Never

12. How would you describe the health of your teeth and gums?

- i) Excellent
- ii) Very good
- iii) Good
- iv) Average
- v) Poor
- vi) Very poor
- vii) Bad

13. Do you think the work of a dentist is important?

- i) Yes
- ii) No
- iii) I do not know

14. Do you think the work of a dentist is as important as the work of a medical doctor?

- i) Yes
- ii) No
- iii) I do not know

Figures showing the results from the clinical examination

Fig 4.

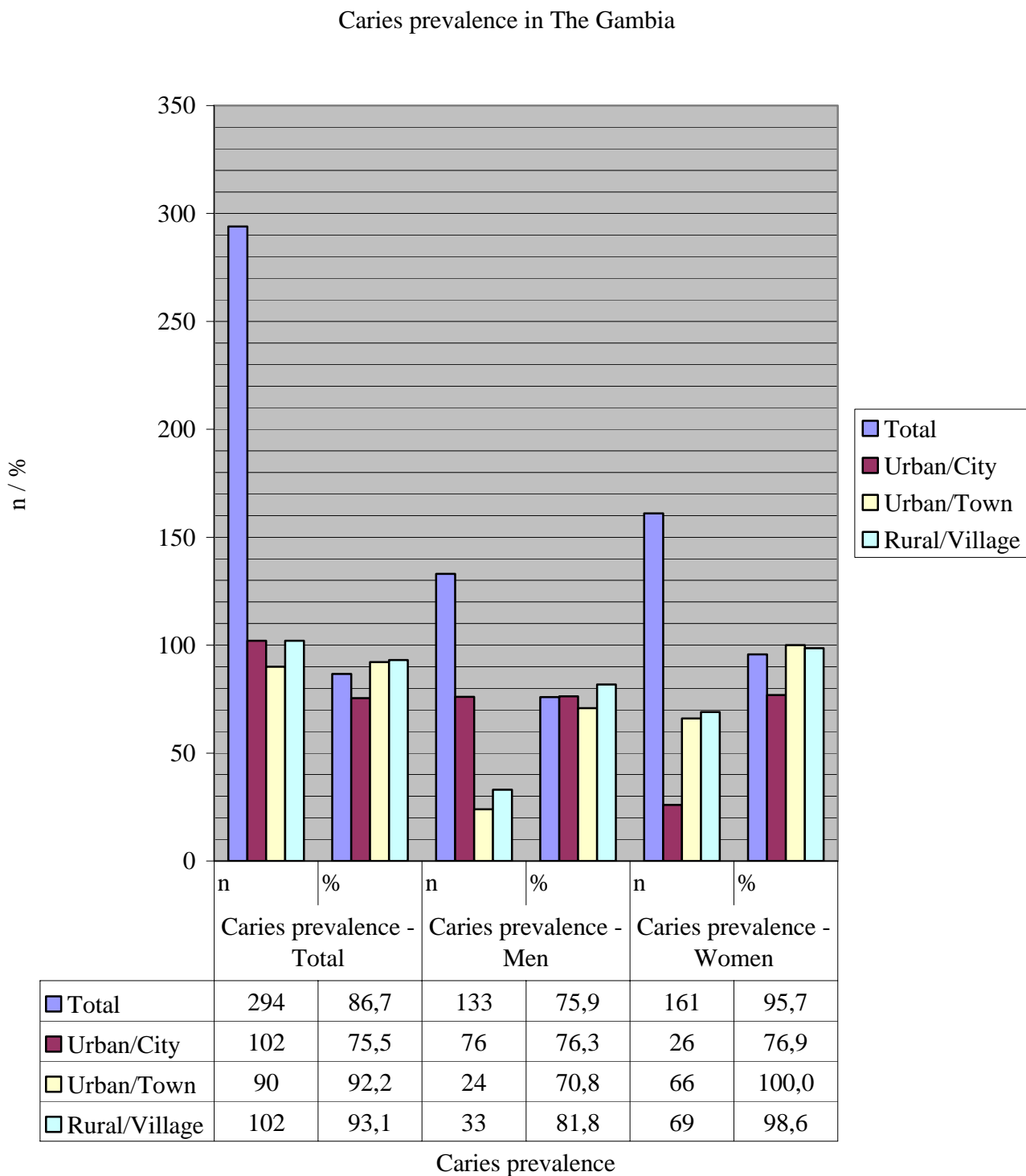


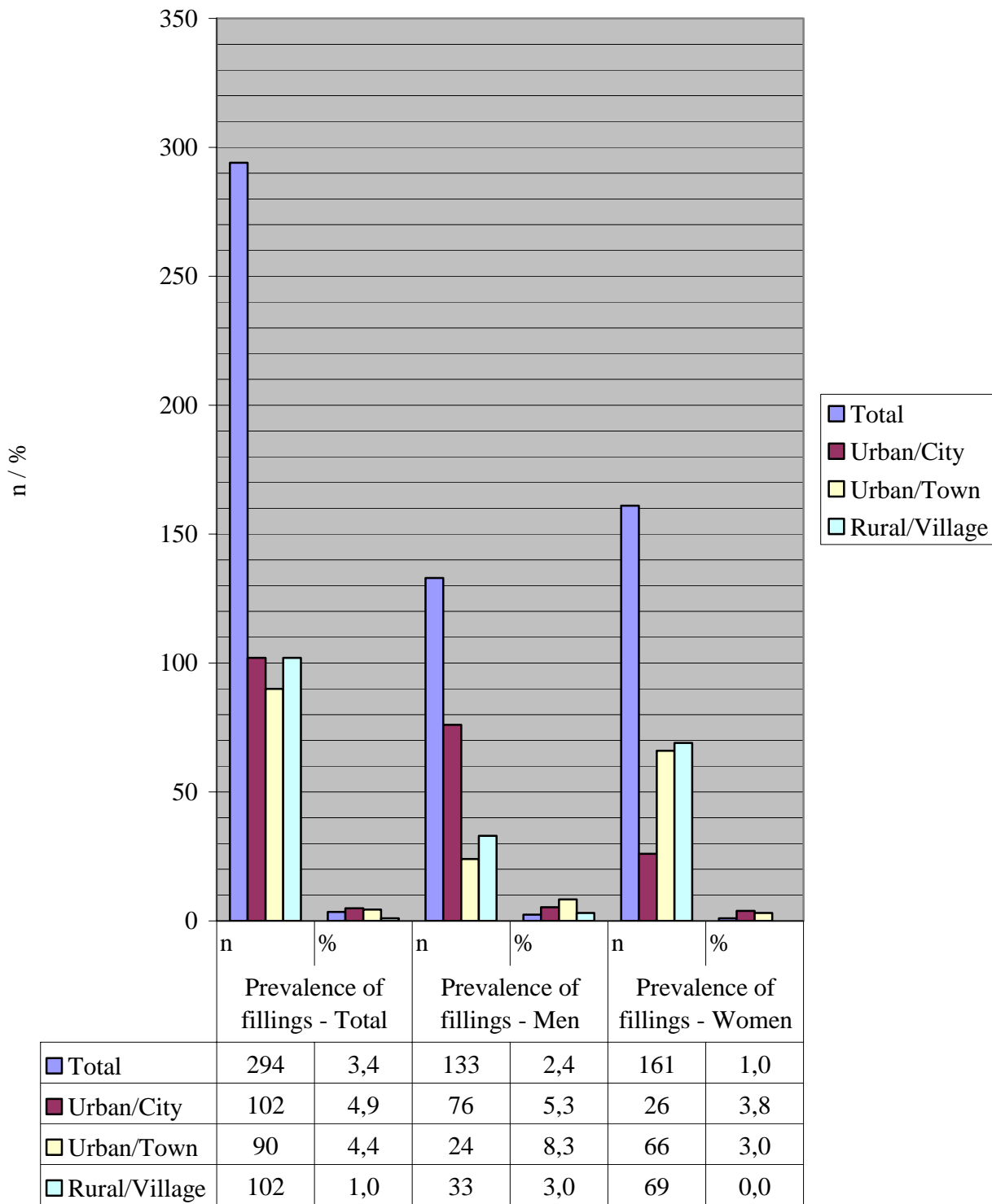
Fig 5.

The table shows the mean DMFT in The Gambia.

			Men		Women	
	n	DMFT \pm SD	n	DMFT \pm SD	n	DMFT \pm SD
Urban/City	102	5, 00 \pm 4, 59	76	4, 82 \pm 4, 30	26	5, 54 \pm 5, 40
Urban/Town	90	8, 44 \pm 6, 19	24	4, 46 \pm 4, 22	66	9, 89 \pm 6, 18
Rural/Village	102	7, 91 \pm 5, 54	33	5, 55 \pm 4, 36	69	9, 04 \pm 5, 71
Total	294	7, 06 \pm 5, 64	133	4, 93 \pm 4, 28	161	8, 83 \pm 6, 01

Fig 6.

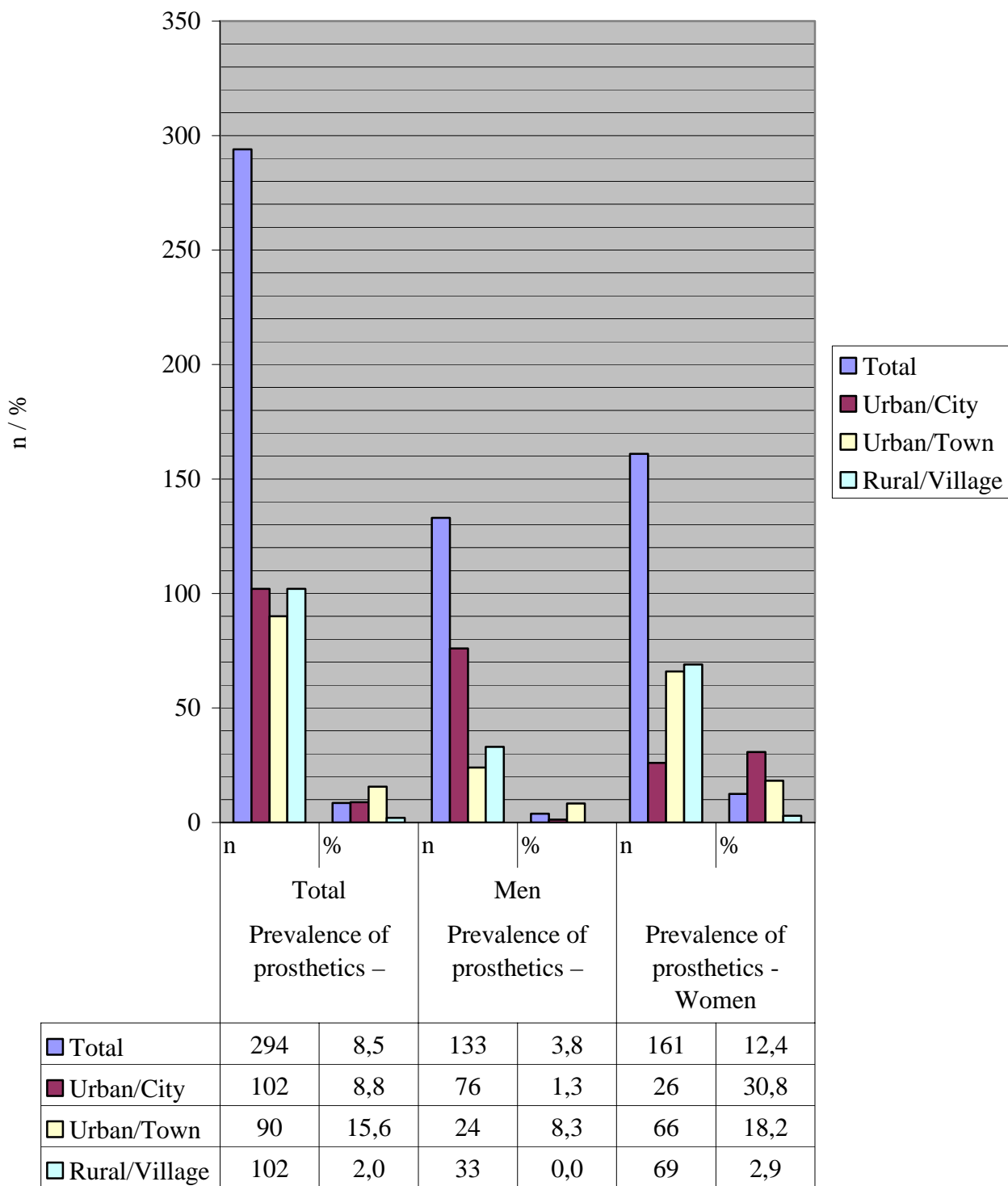
Prevalence of fillings in The Gambia



Prevalence of fillings

Fig 7.

Prevalence of prosthetics in The Gambia



Prevalence of prosthetics

Figures show the results from the questionnaire

Fig 8.

Results of question 1 in percent (n = 294)
Number of meals

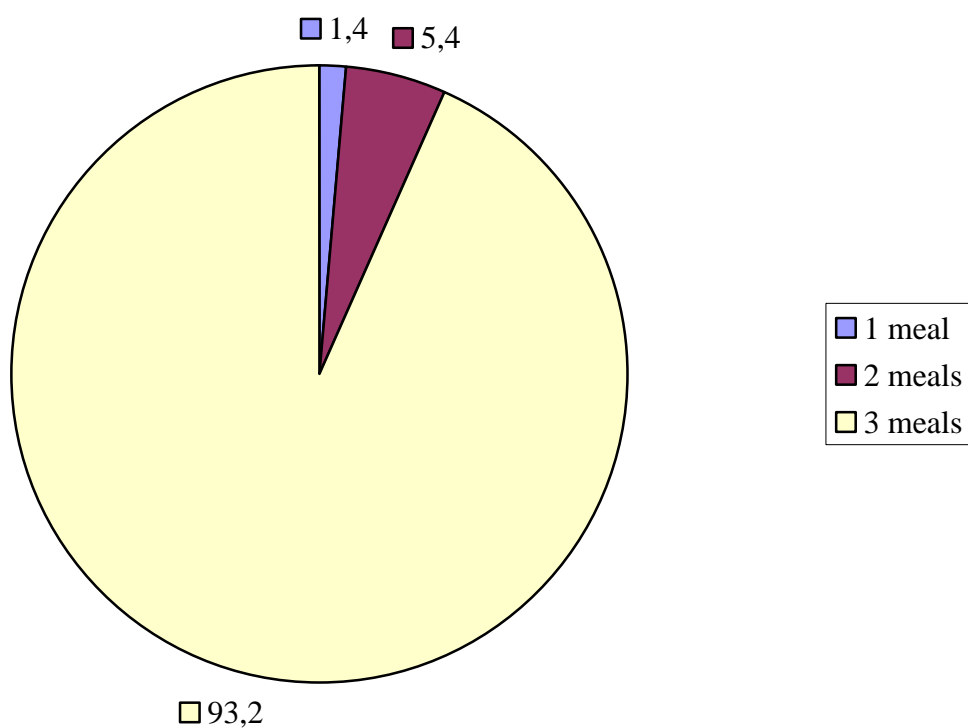


Fig 9.

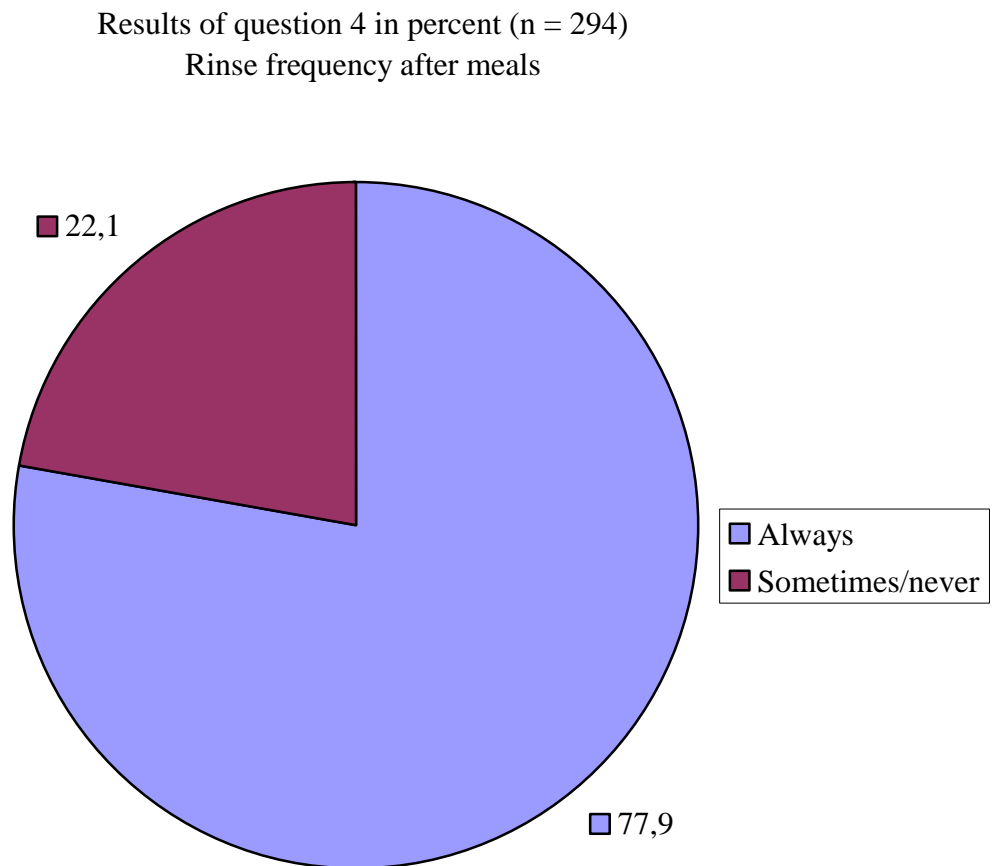


Fig 10.

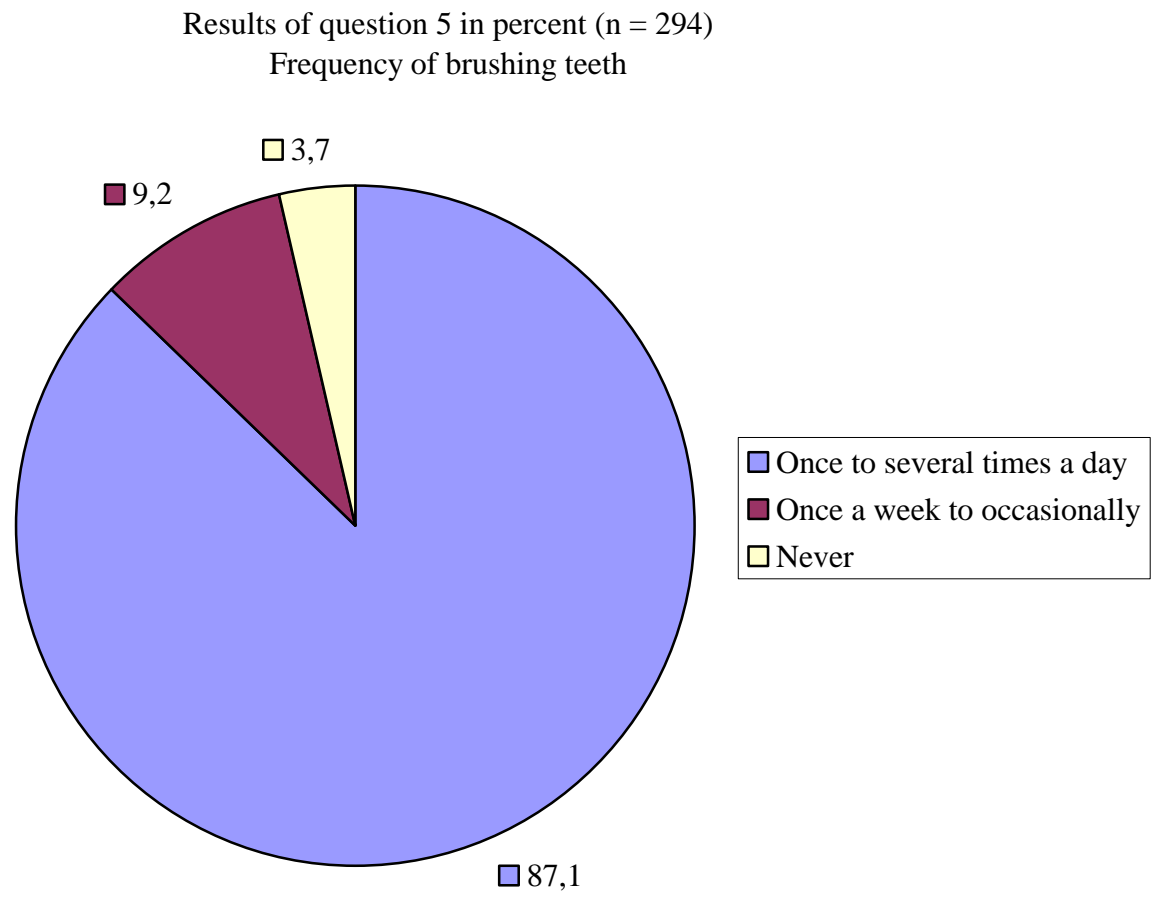
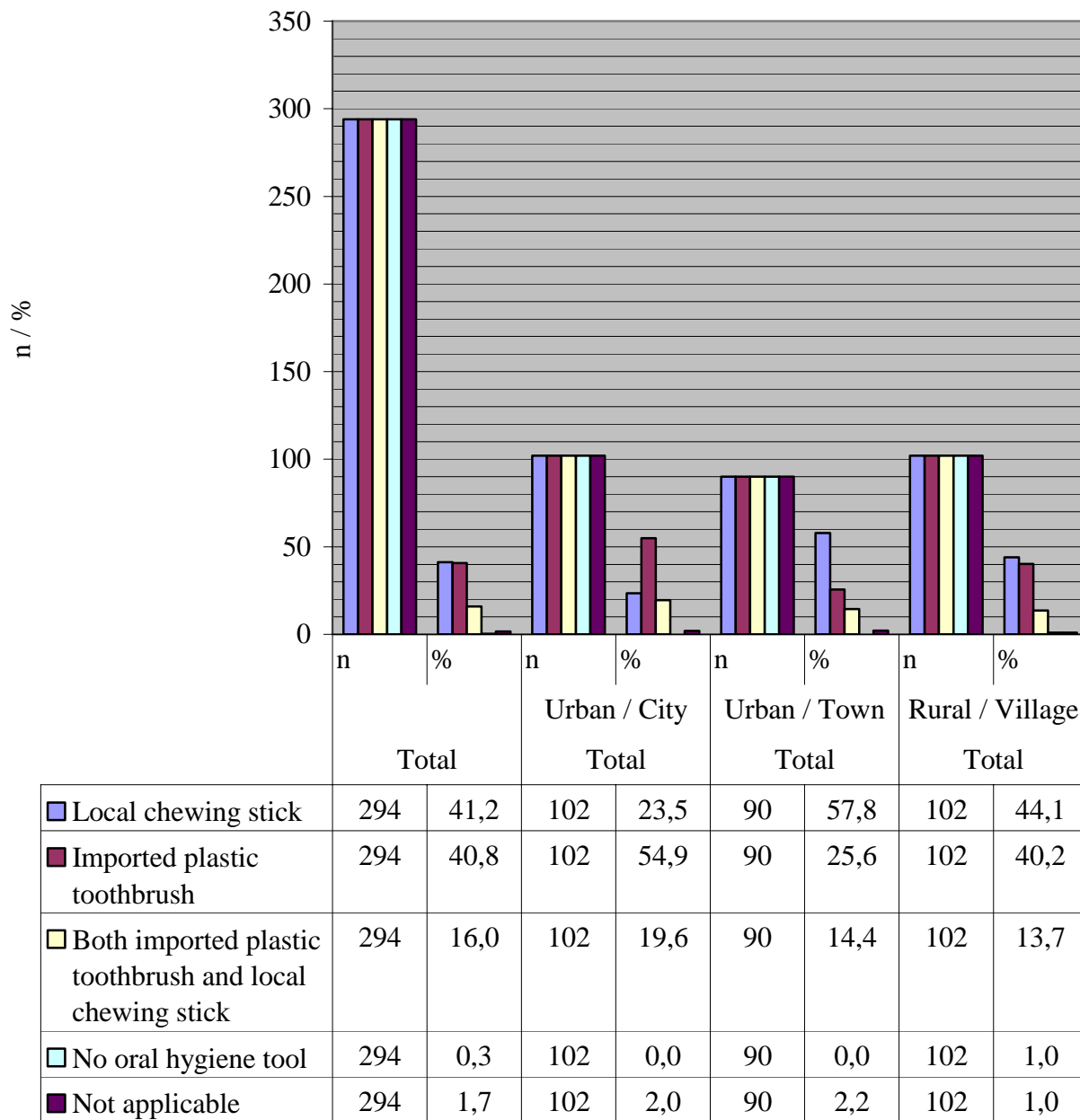


Fig 11.

Results of question 6 in percent
Type of oral hygiene tool



Type of oral hygiene tool

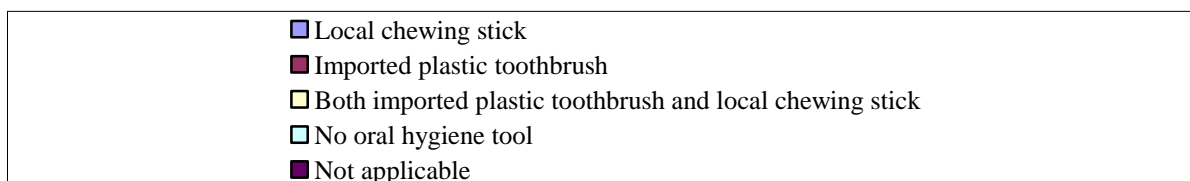


Fig 12.

Results of question 8 in percent (n = 294)
Visit to dentist for regular check-up

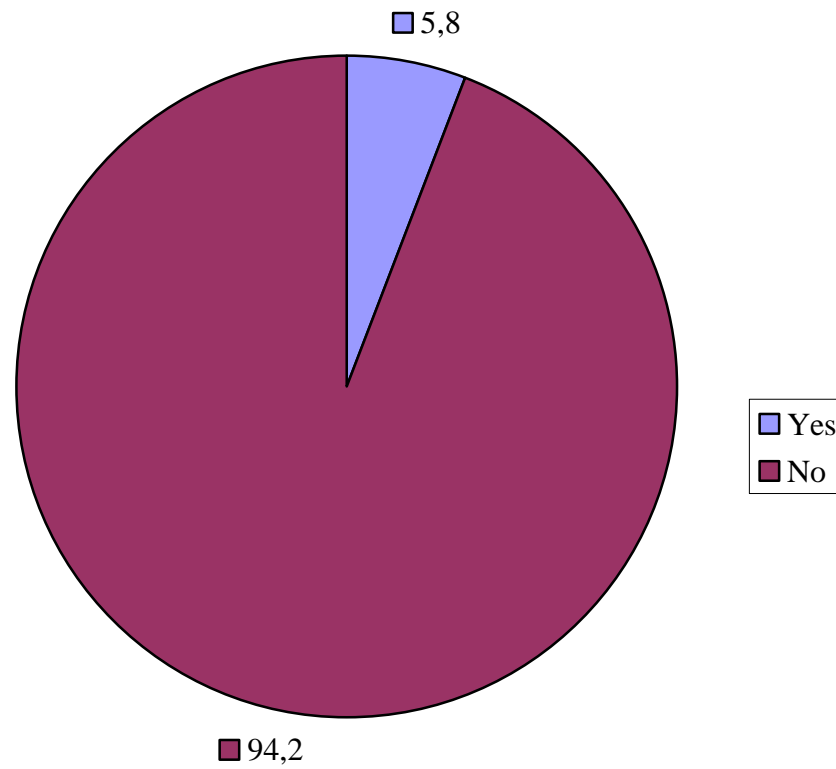


Fig 13.

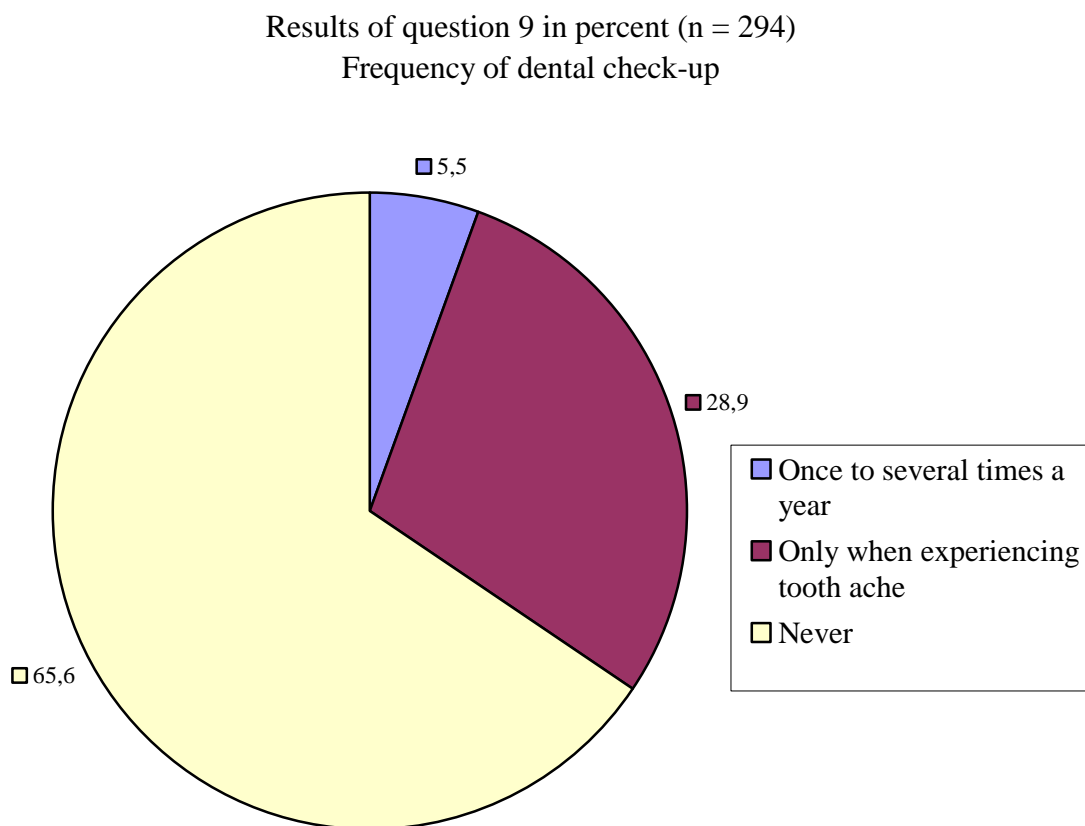


Fig 14.

Results of question 11 in percent (n = 294)
Frequency of toothache within the past year

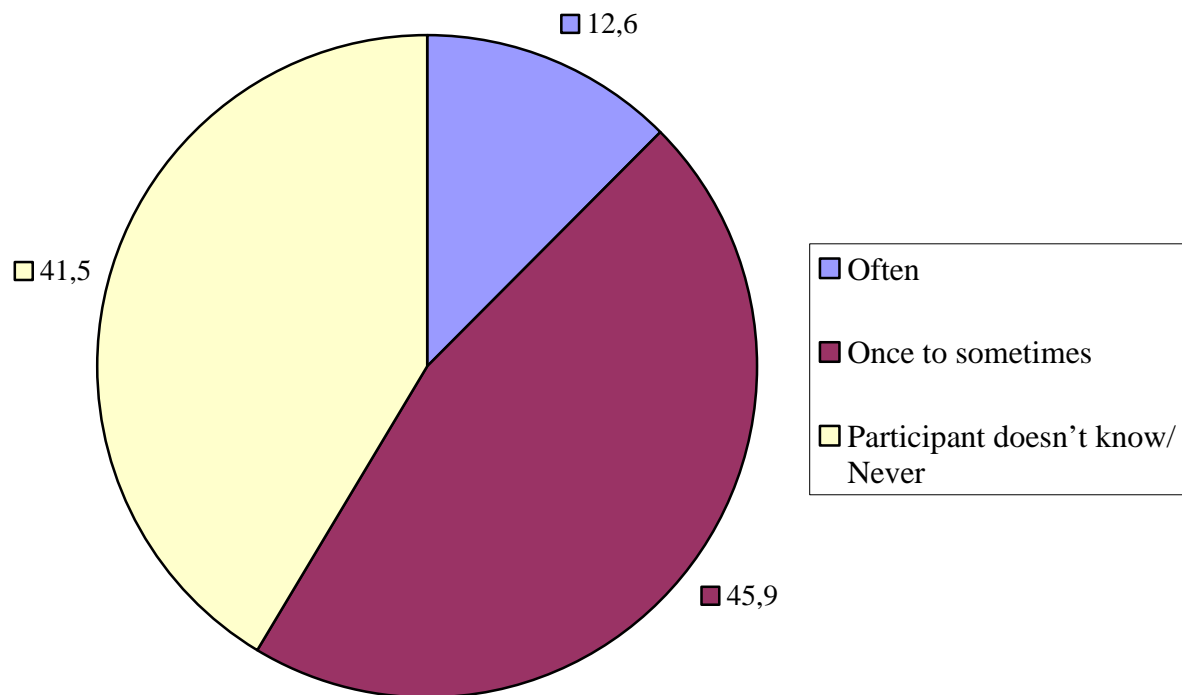


Fig 15.

Results of question 12 in percent (n = 294)
Participants own evaluation of their teeth and gums

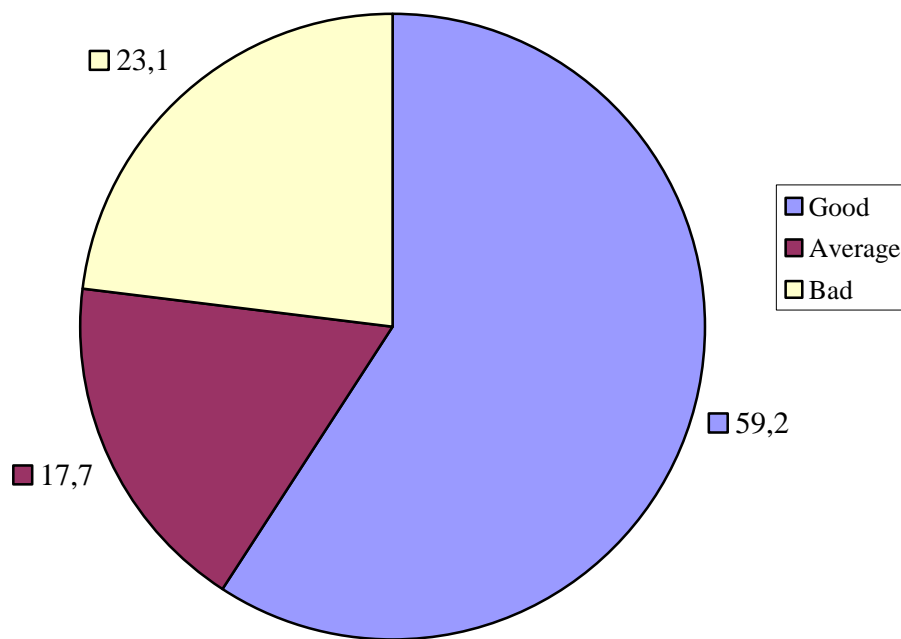


Fig 16.

Results of question 14 in percent (n = 294)
Participant's opinion of the importance of a dentist compared to a
medical doctor

