

## ELEMENTE CHEIE ÎN MENTINEREA IGIENEI ORALE LA UN GRUP DE ADULTI TINERI DIN GERMANIA SI ROMÂNIA

### KEY ELEMENTS OF MAINTAINING GOOD ORAL HYGIENE IN GERMAN AND ROMANIAN YOUNG ADULTS

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#### Abstract:

The primary objective of this study was to investigate the awareness of oral health and the usage of oral hygiene tools of the Romanian and German young adults. This was a retrospective statistical study, where 92 German citizens and 83 people from Romania were investigated by means of an anonymous online questionnaire.

While 39.8% of the Romanians seek the dental office twice a year for a regular dental control and prophylaxis just 18.5% of the Germans do so. The outcome of this study proves that the majority of the German people prefer to go to the dental cabinet once per year (47.8%) comparing to 31.3% of the Romanians. Most people like to brush their teeth twice a day - 62.7% of the Romanians and 81.5% of the Germans.

Some important differences were established but for validation of the results revealed in this work additional investigations are desirable.

**Key-words:** Oral hygiene, tooth brushing, dental floss, mouthwash

#### Introduction

The importance of oral hygiene as a basic component of the overall healthiness is a relevant issue in our modern civilization. The optimal oral hygiene is part of the three main cornerstones of the prophylaxis of the oral cavity which are a healthful diet, an optimal oral hygiene and an appropriate fluoride intake.

The established sentence in dentistry: "A sound tooth does not get carious" is still valid. Albeit it was extended nowadays by the phrase: "A clean gingiva does not get sick as well."

Numerous authors agree that the microbiological plaque is the main etiology of caries and of the inflammation of the gingiva and the periodontium.

Oral hygiene was a very important issue since the beginning of our human race - although always related to its cultural circle with its specific rites and traditions. From this angle of view, it is necessary to determine, if these two national groups of the EU - apart from their magnitude and economic vitality - have the same oral health and hygiene behaviors and manners.

Are both groups equally informed about the actual stand of oral hygiene?

Are they aware about the importance of the regular dental check-ups and prophylactic

measures? Which could be the differences and what could be the reason for them to exist?

The aim of the study is to investigate the importance of different health care tools and how important they are to the two testing groups.

The main target will be a thorough comparison between these two sampling groups taking in consideration different parameters. These include for example oral health care tools being used, oral habits as smoking and dental treatments the sampling persons have undergone in their past. The knowledge generated from the new acquired data can be helpful in improving the oral hygiene strategies for children and teenagers in the future.

To make things easier, it was decided to investigate people between the age of 20 and 30 years because this age group has a very big power of expression. Through their key position in our society, it exists the possibility to observe their knowledge of oral health by checking their childhood and teenage time but also the opportunity, being still young enough, to make a change if things went wrong in the past.

#### Materials and methods

During the period of investigation from first of April 2017 until the first of June 2017 92

German citizens and 83 people from Romania were investigated. This was done by means of specially prepared anonymous online questionnaires. One for the German sampling group translated into German language and one written in Romanian for the second group.

All testing persons of both sampling groups are between 18 and 30 years old which should ensure to be able to make a reasonable comparison.

First of all, the sampling people had to communicate their country of origin, age, occupation and sex in special blanks.

Subsequently, after having confirmed these information by clicking on a special field the questions were revealed. The questionnaire contains 14 questions in total comprising from two to five possible answers, depending on each question. It was impossible to give multiple answers. Consequently, for each question it was just possible to give one single answer by clicking on the respective phrase or word option.

**Recording method, data handling and statistics**

All the survey data were collected by anonymous online questionnaires. This was done by using the Google Forms tool – free available in the internet by Google. This program offers the possibility to design his own questionnaire and it organizes and analysis all the gathered data by itself.

By only having the link it is possible for the sampling persons to access this form and complete it.

Data from 175 probands were collected. Thereby 18 data from each person were gathered. As a result, a total data amount of 3150 was accumulated. These data were transferred into the Excel program to be able to work on the illustrated statistics for comparison reasons being made between the two nationalities shown below in this work.

**Results**

The key elements of maintaining a good oral hygiene in German and Romanian young adults were investigated in this implemented study. For this reason 92 Germans and 83 Romanians were interrogated. The mean age of the Romanian participants is 23.8 and the

German mean is 23.4. In the Romanian samples the ratio of the three age groups of 18-21, 22-25 and 26-30 years is 18.1%, 59.0% and 22.9%. The fraction of the German probands of the mentioned age groups is 21.7%, 57.6% and 20.7%. The female fraction of the German participants is 54.3% (50 of 92) and 61,4% (51 of 83) in the Romanian sampling group.

The gender percentage of the Germans and Romanians does differentiate a bit, but not significantly. The ratio of the German male participants is 45.7% (42 of 92) and 38.6% (32 of 83) in the Romanians.

The most frequent job denoted by both squads is being a student (60.2% of Romanians and 46.7% of Germans) which is ordinary in this age group. The remaining qualifications contain jobs of all social layers in both populations.

The two national groups differ significantly regarding answering the question how many times they are going to the dentist seeking a professional cleaning or for checking-up the oral condition. The following table demonstrates these results. 39.8% of the Romanians replay to go twice a year to the dentist seeking professional oral prophylaxis whereas just 18.5% of the Germans do so. 31.3% of the Romanians and 47.8% of the Germans go once a year seeing the dentist. Once every two years are going 8.4% of the Romanians and 19.6% of the Germans.

14.5% of the Romanians and 6.5% of the Germans answer going to the dentist just when being in pain. 6.0% of the Romanians and 7.6% of the Germans replay even never going to the dental office ever (Table 1).

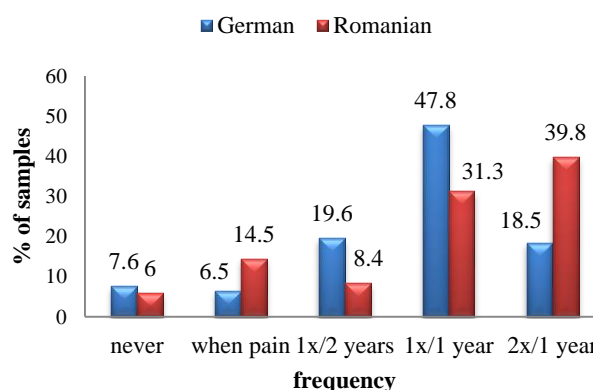


Table 1: Frequency of dental check-ups

13.3% of the Romanians and 6.5% of the

Germans state to clean their teeth three times a day. The frequency of brushing the teeth twice a day is named the most often by both nationalities. In numbers this means 62.7% of the Romanians and 81.5% of the Germans.

19.3% of the Romanian and 9.8% of the German sampling group is cleaning their teeth once a day. Cleaning their teeth three to six times per week is done by 2.4% of the surveyed Romanians and 1.1% of the surveyed Germans. 2.4% of the Romanian group quote to brush their teeth just one to two times per week whereas the German number is 2.2% (Table 2).

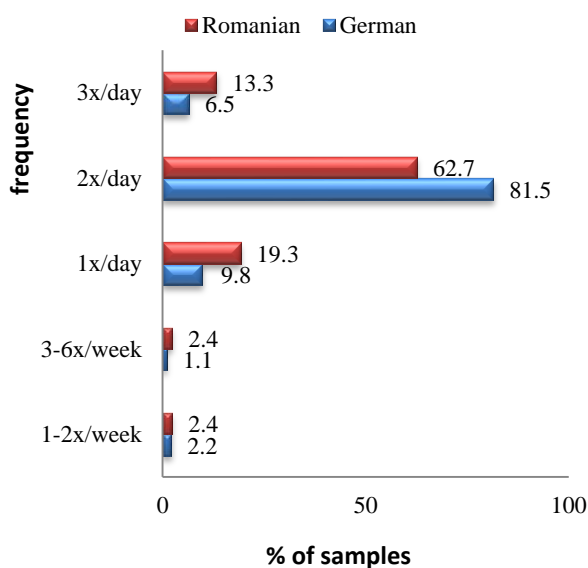


Table 2: Frequency of tooth brushing

57.6% of the German probands and 68.7% of the Romanian probands state to use a common manual toothbrush. Electrical toothbrushes (rotating and ultrasonic ones being not differentiated) are used by 42.4% of the Germans and 31.3% of the Romanians (Table 3).

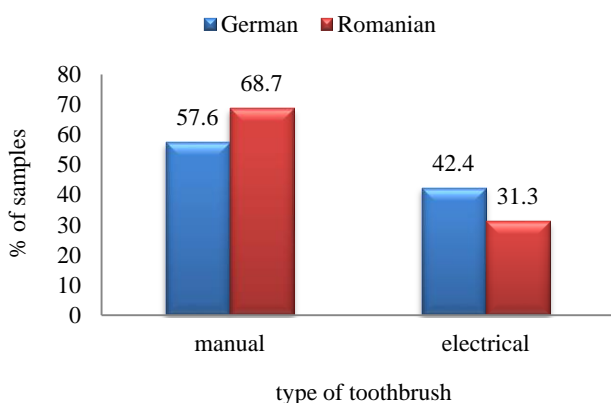


Table 3: Toothbrush type

15.2% of the German group and 13.3% of the Romanian group state to use the dental floss daily. A few times a week this sliding device is applicable by 7.6% of the Germans and 34.9% of the adverse squat. 26.1% of the Germans and 14.5% of the Romanians use the dental floss a few times a month. A few times a year this tool is used by 23.9% of the German samples and only 3.6% of the Romanian ones. 27.2% of the Germans and 33.7% of the Romanians answer to never apply the dental floss ever.

The table below shows how often the two nationalities floss their teeth in comparison to each other (Table 4).

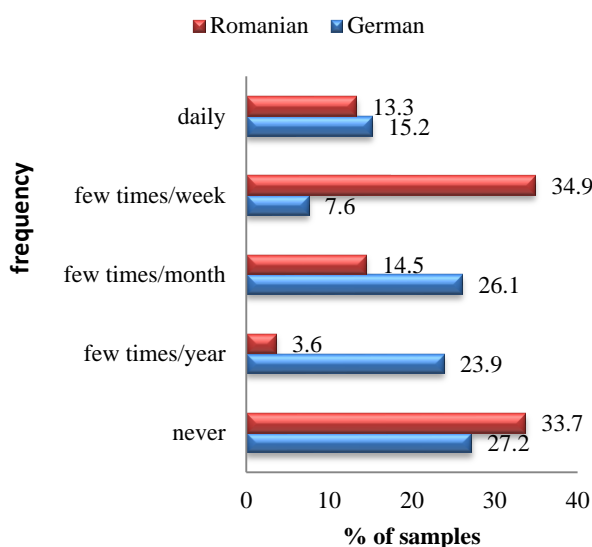


Table 4: Frequency of dental flossing

Daily mouthwash application is done by 14.1% of the Germans and 15.7% of the Romanians. 14.1% of the Germans and 39.8% of the Romanians claim to use it a few times a week. A few times a month the mouthwash is used by 16.3% of the Germans and 14.5% of the Romanians. 23.9% of the Germans and 13.3% of the Romanians state to apply it a few times a year 31.5% of the Germans and 16.9% of the Romanians even answer never using any kind of oral wash.

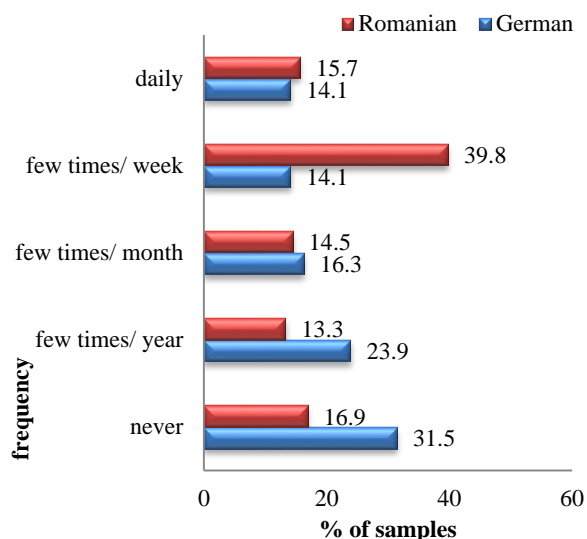


Table 5. Frequency of mouth washing

To the question how many dental treatments- meaning for example endodontic treatment, implants or obturations - the sampling person had undergone in its lifetime 59.0% of the Romanians and 17.4% of the Germans state having had four or more big dental treatments until now. Three big treatments were done on 19.3% of the Romanians and 14.1% of the Germans. 6.0% of the Romanian testing persons and 19.6% of the German ones did have two treatment until today. One treatment was done on 6.0% of the Romanians and 20.7% of the Germans. 9.6% of the Romanian probands and 28.3% of the German probands never had any big dental treatment in their lifetime. Comparing the amount of received dental treatments reveals an important statistical difference. Table 5 demonstrates these results.

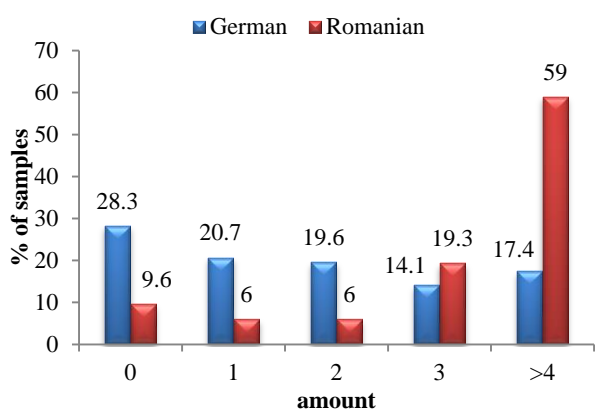


Table. 5 Amount of dental treatments

**Discussion.**

As it results from this present work more than half of the participants of both groups seek the dentist at least once a year to undergo a professional dental cleaning or for a regular oral check-up. 66.3% of the Germans and an impressive number of 71.1% of the Romanians do so. The outcome corresponds with further studies that observed that the frequency of controlled visits in the dental office is on a high level in the German population [13-15]. Interesting to observe is that the Romanians go to see the dentist a bit more frequent. In fact, the number of probands going twice a year to the dental cabinet is far higher in the Romanians with 39.8% in comparison to the Germans with only 18.5%. This could be an indication that the Romanians have a greater motivation in maintaining a healthy oral condition.

By way of contrast the proportion of Romanian samples which are just going to see the dentist when being in pain is significantly higher with 14.5%. Alsoliman (2011) noticed in his study that around one third of the German parents and children just seek the dentist when being in pain [1]. Hernecke (2014) identified a lower number. 20% of his samples just went to the dental cabinet having pain [5]. In the present work just 6.0% of the Germans do so. It could be possible that in the last 30 years the enlightenment of the importance of a regular oral prophylaxis spreaded in the broad population and got its acceptance explaining this low number.

The fraction of people never going to the dentist is very low in both populations.

All these numbers named above could be an indication that the Romanian young adults have better accepted the importance of oral prophylaxis but still both nations are on a relative high level.

Also the lower dental office costs could be an indication why Romanians go more frequently to the dentist. In Romania the average price for a prophylaxis therapy is around 30 Euro in comparison to 70-90 Euro in Germany [4, 9]. But of course here the important difference in the mean salaries should also be taken into consideration being higher in Germany. The German mean salary accounts for around 3000 Euro in comparison to around 2100 Lei in Romania [7, 17]. With the current

conversation rate of 4.64 this means around 451.6 Euro which is just 15.1% of the German one [10].

Calculating the proportion of the mean prophylaxis price to the mean salary Romania is far more expensive (6.6%) than Germany (2.67%). So actually the Romanian prophylaxis therapy is more expensive compared to Germany meaning that the Romanians are clearly more motivated by spending this amount of money annually.

The difference is not very prominent regarding the brushing behavior. The majority of both populations brush their teeth on a daily basis. 96.7% of the Germans and 95.2% of the Romanians clean their teeth at least once a day. This huge number is a sign that the importance of daily teeth brushing arrived in our society's mind. 13.3% of the Romanian young adults brush their teeth three times a day while just 6.5% of the Germans do so, whereas 81.5% of the Germans brush their teeth twice per day. The Romanian proportion is also high but still lower with 62.7%.

Another study came to the result that after having investigated 660 employees from Hamburg that the majority of people prefer to brush their teeth twice a day and that just a small fraction cleans their teeth three times or more often [1]. These findings correspond with the results of this present work.

In a study made in the year 1993 by Peterson was observed that 37% of the Romanian children brushed their teeth at least twice a day and that 26% had their teeth cleaned by their mothers every day [11]. This proves that in the last 22 years the awareness of the oral hygiene inclined in the younger populations mind having a look at the results made in the current study.

Remarkably low is the number of people brushing their teeth only between two to six times per week in both populations.

It is interesting to see that both populations understood very clear that the regular brushing of the teeth has a huge importance for maintaining a healthy oral environment.

The two groups seem both very motivated in terms of keeping their oral cavity clean.

The small percentages of people of both nations brushing their teeth just one to six times a week emphasize this statement. It has to be

pointed out that the cleaning skills were not taken into consideration so just the sole frequency of brushing could be analyzed.

A strong difference exists in terms of which toothbrush is being used- electrical or manual. It is shown that the conventional manual toothbrush existing already for decades is still the type of choice preferred by the broad spectrum population. The Romanian population uses the manual brush more frequently than the German one. 42.4% of the Germans use the electrical brush in comparison to not even one third of the Romanians. It follows that in Germany the electrical brush is almost equivalent to its simpler model. This number corresponds to the results of the Fosca-survey made by Oral-B. Here it was observed that 43% of the German citizens (starting from 14 years old) utilize the electrical toothbrush [3]. The reason could be that Germany as industrialized, western and modern country is always focused on being up to date in terms of technology. Also, maybe the knowledge of the simplicity and efficiency of those brushes is better communicated by dentists and health authorities in Germany.

Because the mean salary in Romania is significantly lower than in Germany as mentioned previously it could be more difficult for the broad Romanian civilization to spend money for this device.

It could be also possible that German children grow up more frequently using already the electrical brush in their parental home which application is shown to them by their parents and dental team. By knowing this device they just continue to use it in their teenage time and adulthood.

The usage of additional auxiliaries for the dental care as dental floss and mouth washes is not very prevalent following the results of this study. It persists a statistical significant difference between the Romanian and German samples regarding the frequency of application of these two cleaning auxiliaries. While the dental floss is applicable at least a few times a week by almost half of the Romanian people not even one fourth of the Germans do so. Similar results were accumulated in terms of the frequency of the usage of mouth washes. Almost half of the Romanians use these mouth rinses at least a few times a week in comparison to only 28,2% of the Germans.

In 2014 “Statistica” published a study in which was spotted that 33% of the German participants used dental floss and 51% applicated mouth washes. With reference to the dental floss this survey acquired similar results [16].

In a study made by Dumitrescu where the oral self-care among Romanian dental students was assessed was observed that 20% of the year one and two students applicated dental flossing. In year five and six this number inclined to 46% [2]. This proofs that with increasing knowledge the appreciation and awareness of the importance of dental flossing rises.

It is very clear that the Romanian testing group seems to be much more dedicated in keeping their oral environment clean with the help of these auxiliaries. This statement seems to be an apparent contradiction observing the answers given to the question how many big dental treatments the samples have undergone in their lifetime. Almost two thirds of the Romanians and not even one five of the Germans had four or more big dental therapies. 28.3% of the Germans and not even 10.0% of the Romanians never had such a treatment.

In industrialized countries, the prevalence of dental caries has clearly declined among children and adolescents in the last few decades [1]. Also other studies demonstrate that German children are more frequent caries free than the Romanian ones and from this it follows that less dental treatments have to be done.

By comparing two different studies made on the caries status of the 12 year old children in Germany and Romania it showed that 81% of the German children and only 22.8% of the Romanian 12 year old were caries free [8,12].

The numbers in this presented work show a significant statistical difference and demonstrate that the Germans use far less often oral cleaning auxiliaries but have had less dental issues than the Romanian probands which seems paradox.

Maybe because such a big number of the Romanians already had dental issues in their childhood and teenage time and these problematic situations bring negative thoughts back to their mind they are more motivated in cleaning their teeth to prevent this situation to happen again.

It could be possible that the German children were educated better how to take care

of their teeth and that their parents watched out better that their children visit the dentist on a regular basis. Therefore the German children consider it as a normal situation to be problem free because their parents took care of their oral health in a supportive way, so they take it for granted and subside their efforts by growing up. Consequently, the usage of dental floss and mouth rinses is suffering.

So the thought comes into mind that the parents could be the key to a person’s healthy mouth and its development. How they educate their children and support them by showing them the importance of a disease free oral environment is of main interest [6].

### **Conclusion**

The outcome of this study proves that the majority of the German people prefer to go to the dental office once per year (47.8%) comparing to 31.3% of the Romanians. Most people like to brush their teeth twice a day – 62.7% of the Romanians and 81.5% of the Germans do so. It has to be mentioned that more Romanians (13.3%) than German people (6.5%) brush their teeth three times per day. Far more Germans use electrical toothbrushes instead of conventional manual brushes than the Romanians do.

Enlightenment, advisement as well as the practical demonstration of the oral hygiene auxiliary devices at the first appointment and the re-motivation at the follow-up dates are a vital part of the dentists job.

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