

Psychosomatics of the impact of dental radiological investigations on the patient

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ABSTRACT

Radiological diagnosis in dental medicine is of overwhelming importance, helping the dentist to develop and justify his final diagnosis. They are increasingly common situations where diagnosis can only be determined radiologically. It is the patient's right to be informed about his or her state of health and at the same time we add a doctor's duty. In our material, we tried to highlight the impact on the patient the conducting and communicating the outcome of radiological investigations, to prove that there is fear of irradiation and to understand how the radiological image that demonstrates a poor orodental health entails the need for rehabilitation.

This statistical study was performed on a total of 223 subjects (128 female subjects and 95 male subjects).

The subjects of the study were asked questionnaires whose questions highlight the confirmation or rejection of the proposed objectives.

The results obtained will show to what extent the patients have quantified the requirements of the questionnaires. Obtaining responses with a slightly surprising character certifies the rigor of our research.

Keywords: impact of outcome communication, radiological investigations, radiation fear, oral rehabilitation

INTRODUCTION

Radiological diagnosis in dentistry is of overwhelming importance, helping the dentist to develop and justify his final diagnosis. Situations are becoming more common when the diagnosis can be established exclusively radiologically.

Medicine needs, in addition to the consultation carried out by the doctor, directly (clinical consultation) and additional investigations; and this because not all information is visible to us with the naked eye [1].

According to Zlate M. 2007 [2], communication of the results of investigations of any kind, including radiological ones, can influence the state of the subject (stimulation or inhibition).

It is the patient's right to be informed about his state of health [3], and at the same time we would add a duty of the doctor. It has been observed that the delivery of bad news is more difficult for the doctor when the relationship with the patient is long-lasting, the patient is young or has repeatedly expressed optimism about the good results of investigations or treatment.

All bad news therefore has serious consequences for patients and their families. It follows that you cannot know how patients will react to bad news until you ascertain their perception of their clinical situation [4].

Communicating bad news in dentistry is a delicate task for the doctor, who has to be tolerant; most

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of the time, the patient shows fatalism upon learning the diagnosis. In communication, we highlight the doctor's capacity for assumption (assuming what is said, the diagnosis and the treatment).

Through communication, the doctor creates a waiting horizon in the patient's mind [5].

In addition to the well-known fear of the dentist, patients face another great fear: X-rays, radiation and exposure to them. Many times I do not agree with taking an X-ray even if the doctor has indicated it. Many parents are confused and worried about why dentists ask for x-rays for children [1]. With the help of an x-ray, the dentist can figure out what kind of condition the patient is dealing with and what treatment should be followed.

X-rays use rays referred to as Rontgens, or X-rays, after their discoverer, Wilhelm Rontgen; they have a shorter wavelength than UV rays but longer than gamma rays.

The amount of radiation absorbed by a person is measured in Sievert (Sv). It represents the radiation dose, quantitatively evaluating the biological effects of a radiation. The first radiology machines used quite high doses of radiation, the dangers of exposure not yet being known. Secondly, the clarity of the image given by those devices was very poor, and a higher dose of radiation was required for a good contrast. With the current technological evolution, the new devices use radiation doses 3-4 times lower, and a shorter duration of exposure, thus limiting the patient's radiation dose.

Natural radiation fund/year (for comparison) -3.6 mSv

- Radiography on conventional film – 0.0095 mSv
- Digital dental radiography – 0.0032 mSv
- Digital panoramic radiography (OPG) – 0.0047-0.0145 mSv
- Cephalometric radiology – Teleradiography-0.015 mSv
- CBCT 3D tomography (cone beam tomography) – 0.025-0.06 mSv
- Medical CT – conventional with linear beams (for comparison) – 0.025-0.06 mSv
- Bucharest-New York plane flight (for comparison) – 0.094 mSv
- Dangerous dose/year – below this value no clinical damage is observed – 250
- Dose/year considered lethal – 7000

Not all elements of the environment (food, water, air, soil, plants) contain elements (atoms) with the ability to retain or eliminate a degree of radiation. Some of these atoms are unstable and release energy in the form of waves or particles (alpha and beta). We are constantly exposed to radiation, even more so than 30 years ago, due to the development of technology and its use on an individual level, in

everyday life. We have natural sources (atmospheric, solar and terrestrial radiation) but also artificial ones (TV, mobile phones, radio waves, wi-fi waves, monitor, radio communications). However, the effects of all these waves on our body are small enough to be dangerous [1].

Returning to the evaluation of the radiological image, we can recall the fact that we frequently encounter the situation where radiological investigations carried out in a certain topographical area can highlight latent conditions existing there or in other neighboring topographical areas.

Providing the patient with this information may cause the patient to recall or simply state that the objective symptomatology has begun, resulting from the subjective interpretation of awareness of the newly discovered conditions.

Indisputably “a picture is worth a thousand words” (Chinese proverb), and the patient's viewing of the radiological film has an impact on it. The visual impact, because it is what we are talking about, can trigger the psychological activation of some elements that can stimulate clear actions to improve oral health. There are situations where the presentation by the doctor to a patient of a radiological film that proves that a complex rehabilitation is necessary results in the patient starting this action.

There are (not a few) situations in which, for various reasons (the patient's carelessness, poor material situation, lack of interest in one's own person) the visual impact of the dental film regarding poor dental health does not achieve its goal (starting oral rehabilitation).

The purpose of the study is to identify the psychosomatic landmarks of the impact on the patient resulting from radiological investigations in dentistry.

1. Main objective

Quantifying the impact of performing and communicating the result of radiological investigations on the patient.

2. Secondary objectives

A. Probing the certainty that there is a fear of radiation among patients.

B. The radiological image that demonstrates poor periodontal health implies the need to rehabilitate this aspect.

MATERIAL AND METHOD

Available population: The study was conducted on a total of 223 subjects (128 female subjects and 95 male subjects). The subjects were sampled in 6 age categories (both female and male). These categories are: 15-19 years, 20-29 years, 30-39 years, 40-49 years, 50-59 years and over 60 years. The implementation period was 8 months, respectively: 1 January 2021 – 31 August 2021 (Decision of the Scientific Research Ethics Commission number 929 of 26.05.2020,

completed with the decision number 1350 of 23.04.2021).

Inclusion criteria in the study: subjects attended at least once a dental office as patients.

The applied questionnaire contained a number of 10 questions, structured in such a way as to help us confirm or not the objectives of the study.

Name initials: Age: Sex:

1. Do you consider it important to carry out imaging investigations (x-rays, CT, MRI) for diagnostic purposes?

Yes No

2. Are you convinced that the radiological investigation does no harm, because there are means of protection and the radiation is properly dosed?

Yes No

3. Are you afraid that an additional radiological investigation may reveal conditions of which you were not aware until then?

Yes No

4. Can the radiological evidence of new conditions lead you to report the presence of new symptoms or painful episodes?

Yes No

5. Does the radiological image attesting to poor orodental health lead you to perform complex oral rehabilitation?

Yes No

6. Can the doctor make a diagnosis even without other auxiliary means (radiological examination)?

Yes No

7. Does the fear of radiation make you refuse to have a radiological investigation?

Yes No

8. Do radiological investigations aim to treat already known and existing conditions?

Yes No

9. When performing radiological investigations, do you focus on treating already known foci without giving importance to the identification of other new or latent foci?

Yes No

10. Does the radiologically demonstrated deficient periodontal health entail the performance of other treatments apart from those for which you have already seen the doctor?

Yes No

The main objective related to quantifying the impact of performing and communicating the result of radiological investigations on the patient was quantified by applying 6 questions structured in 3 pairs.

RESULTS

Questionnaires were applied to a number of 223 subjects, of which 128 were female and 95 were male.

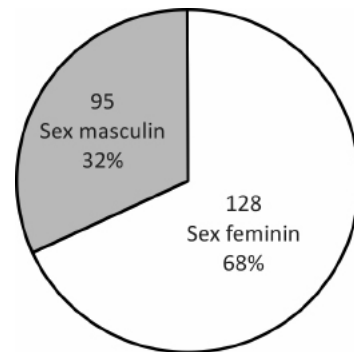


FIGURE 1. Number of subjects by sex

The distribution of subjects by gender and age range is as follows: the female sex

- 15 – 19 years 4 subjects
- 20 – 29 years 30 subjects
- 30 – 39 years 29 subjects
- 40 – 49 years 30 subjects
- 50 – 59 years 20 subjects
- over 60 years 15 subjects

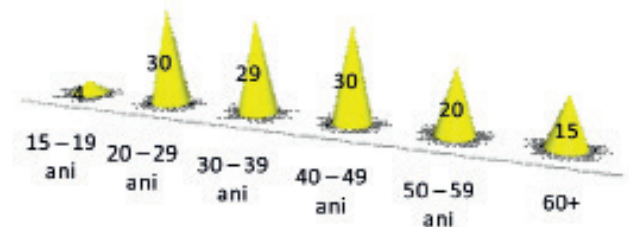


FIGURE 2. Number of female subjects distributed by age category

- in the male sex
- 15-19 years 8 subjects
- 20-29 years 16 subjects
- 30-39 years 16 subjects
- 40-49 years 29 subjects
- 50-59 years 14 subjects
- over 60 de years 12 subjects

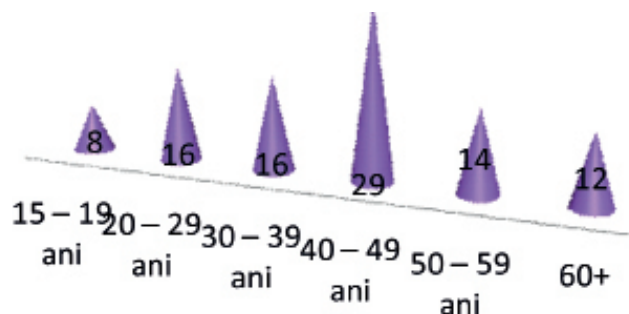


FIGURE 3. Number of male subjects distributed by age category

The degree of confirmation of the objectives of the questionnaire applied to the age category 15-19 years, female (results expressed as a percentage).

TABLE 1. Percentage representation of the confirmation of objectives

| Nr. crt. subjects | 1 | 2 | 3 | 4 | Total pers/ob |
|-------------------|-------|-------|-------|-------|---------------|
| Ob1 | 33.33 | 33.33 | 33.33 | 0 | 25 |
| Ob2A | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 100 | 0 | 100 | 100 | 75 |
| Total | 44.44 | 11.11 | 44.44 | 33.33 | 33.33 |

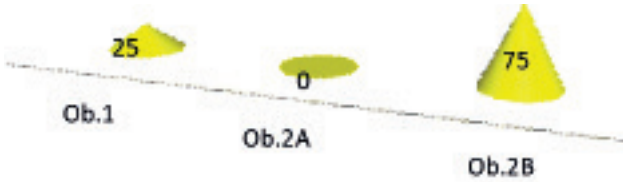


FIGURE 4. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 20-29 years, female (results expressed as a percentage).



FIGURE 5. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 30-39 years, female (results expressed as a percentage).

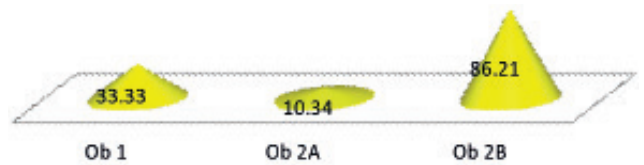


FIGURE 6. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 40-49 years, female (results expressed as a percentage).



FIGURE 7. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 50-59 years, female (results expressed as a percentage).

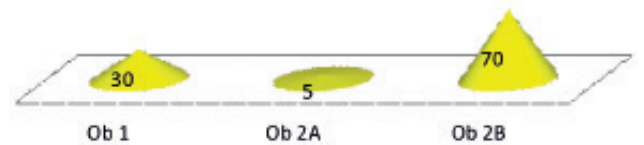


FIGURE 8. Illustration of percentage confirmation of objectives

TABLE 2. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| Ob1 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 66.67 | 33.33 | 0 | 66.67 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 0 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 0 | 100 | 0 | 0 | 100 | 100 | 0 |
| Total | 11.11 | 11.11 | 11.11 | 11.11 | 33.33 | 55.56 | 44.44 | 33.33 | 22.22 | 33.33 | 11.11 | 11.11 | 44.44 | 44.44 | 0 |

| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total pers/ob |
|-------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|-------|-------|---------------|
| Ob1 | 0 | 33.33 | 33.33 | 0 | 100 | 66.67 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 0 | 66.67 | 33.33 | 30 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 0 | 100 | 0 | 100 | 100 | 60 |
| Total | 0 | 44.44 | 44.44 | 33.33 | 66.67 | 55.56 | 33.33 | 11.11 | 44.44 | 44.44 | 11.11 | 33.33 | 0 | 55.56 | 44.44 | 30 |

TABLE 3. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ob1 | 0 | 66.67 | 66.67 | 66.67 | 33.33 | 0 | 66.67 | 33.33 | 0 | 33.33 | 33.33 | 66.67 | 66.67 | 33.33 | 33.33 |
| Ob2A | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 |
| Total | 0 | 55.56 | 55.56 | 55.56 | 44.44 | 33.33 | 55.56 | 44.44 | 66.67 | 44.44 | 44.44 | 55.56 | 55.56 | 44.44 | 44.44 |

| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total pers/ob |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|---------------|
| Ob1 | 33.33 | 33.33 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 33.33 | 0 | 0 | 33.33 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.34 |
| Ob2B | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 86.21 |
| Total | 44.44 | 44.44 | 33.33 | 44.44 | 11.11 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 33.33 | 44.44 | 33.33 | 0 | 43.30 |

TABLE 4. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------|-------|-------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|-------|-------|
| Ob1 | 66.67 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 0 | 33.33 | 33.33 | 33.33 | 66.67 | 0 | 66.67 | 33.33 |
| Ob2A | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Total | 55.56 | 77.78 | 44.44 | 44.44 | 44.44 | 44.44 | 33.33 | 0 | 44.44 | 44.44 | 44.44 | 55.56 | 33.33 | 55.56 | 44.44 |

| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total pers/ob |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| 0 | 0 | 0 | 66.67 | 66.67 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 0 | 33.33 | 30 |
| 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.67 |
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 93.33 |
| 33.33 | 33.33 | 33.33 | 55.56 | 88.90 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 11.11 | 44.44 | 33.33 | 33.33 | 44.44 | 43.33 |

TABLE 5. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|-------|
| Ob1 | 33.33 | 66.67 | 66.67 | 0 | 33.33 | 33.33 | 0 | 66.67 | 33.33 | 33.33 | 0 | 33.33 | 33.33 | 0 | 33.33 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 0 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 |
| Total | 11.11 | 55.56 | 55.56 | 33.33 | 44.44 | 11.11 | 33.33 | 55.56 | 44.44 | 44.44 | 33.33 | 44.44 | 11.11 | 0 | 44.44 |

| 16 | 17 | 18 | 19 | 20 | Total pers/ob |
|----|-------|-------|-------|-------|---------------|
| 0 | 33.33 | 33.33 | 33.33 | 33.33 | 30 |
| 0 | 100 | 0 | 0 | 0 | 5 |
| 0 | 100 | 0 | 100 | 100 | 70 |
| 0 | 77.78 | 11.11 | 44.44 | 44.44 | 35 |

The degree of confirmation of the objectives of the questionnaire applied to the age category 60+ years, female (results expressed as a percentage).

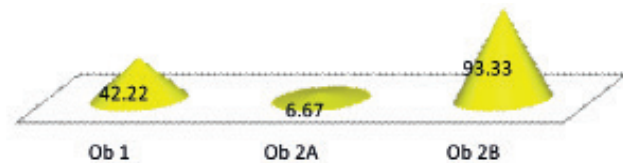


FIGURE 9. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 15-19 years, male sex (results expressed as a percentage).

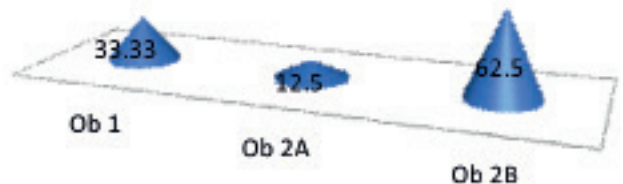


FIGURE 10. Illustration of percentage confirmation of objectives

TABLE 6. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ob1 | 33.33 | 33.33 | 66.67 | 66.67 | 66.67 | 33.33 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 66.67 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| Ob2B | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 |
| Total | 44.44 | 44.44 | 55.56 | 55.56 | 55.56 | 44.44 | 33.33 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 55.56 |

| 14 | 15 | Total pers/ob |
|-------|-------|---------------|
| 66.67 | 33.33 | 42.22 |
| 0 | 0 | 6.67 |
| 100 | 100 | 93.33 |
| 55.56 | 44.44 | 47.70 |

TABLE 7. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total pers/ob |
|-------|-------|-------|-------|---|-------|-------|-------|-------|---------------|
| Ob1 | 66.67 | 33.33 | 66.67 | 0 | 33.33 | 33.33 | 0 | 33.33 | 33.33 |
| Ob2A | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 12.5 |
| Ob2B | 100 | 0 | 100 | 0 | 0 | 100 | 100 | 100 | 62.5 |
| Total | 55.56 | 11.11 | 55.56 | 0 | 44.44 | 44.44 | 33.33 | 44.44 | 36.11 |

TABLE 8. Percentage representation of the confirmation of objectives

| | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|---|---|-------|-------|-------|-------|----|-------|-------|-------|
| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Ob1 | 33.33 | 66.67 | 33.33 | 33.33 | 66.67 | 0 | 0 | 33.33 | 33.33 | 66.67 | 33.33 | 0 | 33.33 | 33.33 | 0 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 100 | 100 | 0 | 0 | 100 | 0 | 0 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| Total | 44.44 | 55.56 | 11.11 | 11.11 | 55.56 | 0 | 0 | 44.44 | 44.44 | 55.56 | 44.44 | 0 | 44.44 | 44.44 | 33.33 |

| | |
|-------|---------------|
| 16 | Total pers/ob |
| 0 | 29.17 |
| 0 | 0 |
| 100 | 68.75 |
| 33.33 | 32.64 |

The degree of confirmation of the objectives of the questionnaire applied to the age category 20-29 years, male sex (results expressed as a percentage).



FIGURE 11. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 30-39 years, male sex (results expressed as a percentage).

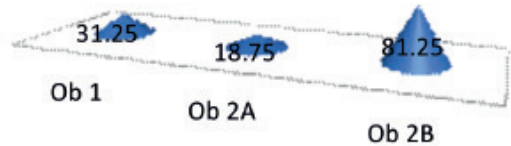


FIGURE 12. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 40-49 years, male sex (results expressed as a percentage).

TABLE 9. Percentage representation of the confirmation of objectives

| | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|---|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Ob1 | 33.33 | 0 | 33.33 | 66.67 | 0 | 100 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 66.67 | 0 | 0 | 33.33 |
| Ob2A | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ob2B | 100 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Total | 44.44 | 66.67 | 11.11 | 55.56 | 0 | 100 | 44.44 | 44.44 | 44.44 | 44.44 | 33.33 | 55.56 | 33.33 | 33.33 | 44.44 |

| | |
|-------|---------------|
| 16 | Total pers/ob |
| 33.33 | 31.25 |
| 0 | 18.75 |
| 100 | 81.25 |
| 44.44 | 43.75 |

TABLE 10. Percentage representation of the confirmation of objectives

| | | | | | | | | | | | | | | | |
|-------|---|-------|-------|-------|-------|-------|-------|-------|---|-------|-------|----|-------|-------|-------|
| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Ob1 | 0 | 33.33 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 0 | 0 | 33.33 | 66.67 | 0 | 0 | 33.33 | 33.33 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |
| Ob2B | 0 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 0 | 100 | 0 | 0 |
| Total | 0 | 11.11 | 33.33 | 11.11 | 44.44 | 44.44 | 44.44 | 33.33 | 0 | 44.44 | 88.9 | 0 | 33.33 | 11.11 | 11.11 |

| | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|---------------|
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total pers/ob |
| 0 | 0 | 0 | 66.67 | 66.67 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 66.67 | 0 | 27.58 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 6.9 |
| 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 0 | 65.52 |
| 33.33 | 33.33 | 33.33 | 55.56 | 22.22 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 11.11 | 44.44 | 55.56 | 0 | 33.33 |



FIGURE 13. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 50-59 years, male gender (results expressed as a percentage).



FIGURE 14. Illustration of percentage confirmation of objectives

The degree of confirmation of the objectives of the questionnaire applied to the age category 60+ years, male sex (results expressed as a percentage).



FIGURE 15. Illustration of percentage confirmation of objectives

RESULTS

Age category 15-19 years, female confirms the main objective (quantification of the impact of performing and communicating the result of radiological investigations on the patient) in proportion to

25%, confirms the 2A – secondary objective (proving the certainty of the fact that there is a fear of radiation among patients) in proportion of 0%, confirms objective 2B – secondary (the radiological image demonstrating poor periodontal health implies the need to rehabilitate this aspect) in proportion to 75%.

Age category 20-29 years, female gender confirms the main objective in proportion 30%, confirms objective 2A – secondary in proportion 0%, confirms objective 2B – secondary in proportion 60%.

Age category 30-39 years, female sex confirms the main objective in proportion of 33.33%, confirms objective 2A – secondary in proportion of 10.34%, confirms objective 2B – secondary in proportion of 86.21%

Age category 40-49 years, female confirm the main objective in proportion of 30%, confirm objective 2A – secondary in proportion of 6.67%, confirm objective 2B – secondary in proportion of 93.33%.

Age category 50-59 years, female confirms the main objective in proportion of 30%, confirms objective 2A – secondary in proportion of 5%, confirms objective 2B – secondary in proportion of 70%.

Age category over 60 years, female sex confirms the main objective in proportion of 42.22%, confirms objective 2A – secondary in proportion of 6.67%, confirms objective 2B – secondary in proportion of 93.33%.

Age category 15-19 years, male confirms the main objective in proportion of 33.33%, confirms objective 2A – secondary in proportion of 12.5%, confirms objective 2B – secondary in proportion of 62.5%.

Age category 20-29 years, male sex confirms the main objective in proportion of 29.17%, confirms objective 2A – secondary in proportion of 0%, confirms objective 2B – secondary in proportion of 68.75%.

Age category 30-39 years, male sex confirms the main objective in proportion of 31.25%, confirms

TABLE 11. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Total pers/ob |
|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| Ob1 | 33.33 | 33.33 | 33.33 | 0 | 33.33 | 33.33 | 33.33 | 0 | 0 | 33.33 | 33.33 | 33.33 | 33.33 | 33.33 | 26.19 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 7.14 |
| Ob2B | 100 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 64.29 |
| Total | 44.44 | 11.11 | 11.11 | 0 | 44.44 | 44.44 | 44.44 | 33.33 | 33.33 | 44.44 | 44.44 | 44.44 | 44.44 | 44.44 | 32.54 |

TABLE 12. Percentage representation of the confirmation of objectives

| Pers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total pers/ob |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| Ob1 | 66.67 | 33.33 | 0 | 33.33 | 33.33 | 66.67 | 33.33 | 33.33 | 33.33 | 0 | 0 | 33.33 | 30.55 |
| Ob2A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 8.33 |
| Ob2B | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 0 | 100 | 100 | 75 |
| Total | 55.56 | 44.44 | 33.33 | 44.44 | 44.44 | 55.56 | 11.11 | 11.11 | 44.44 | 33.33 | 33.33 | 44.44 | 37.96 |

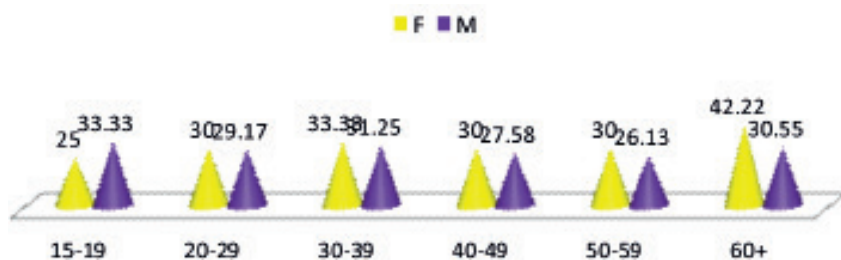


FIGURE 16. Percentage illustration of the confirmation of the main objective 1

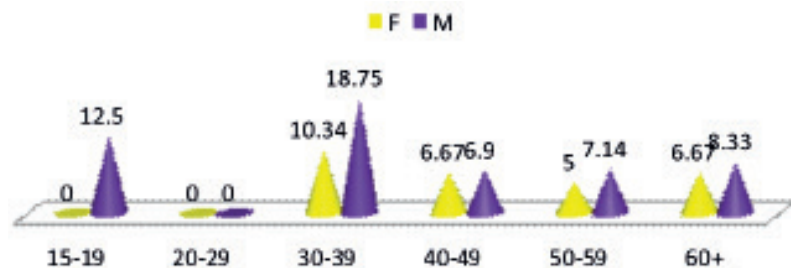


FIGURE 17. Illustration of the percentage of confirmation of the 2A-secondary objective

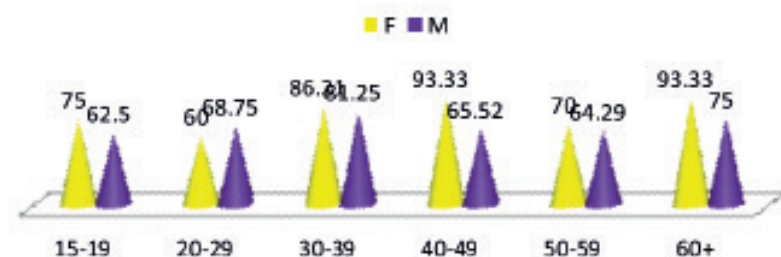


FIGURE 18. Percentage illustration of the confirmation of the 2B-secondary objective

objective 2A – secondary in proportion of 18.75%, confirms objective 2B – secondary in proportion of 81.25%.

Age category 40-49 years, male sex confirms the main objective in proportion of 27.58%, confirms objective 2A – secondary in proportion of 6.9%, confirms objective 2B – secondary in proportion of 65.52%.

Age category 50-59 years, male sex confirms the main objective in proportion of 26.19%, confirms objective 2A – secondary in proportion of 7.14%, confirms objective 2B – secondary in proportion of 64.29%.

Age category over 60, male confirms the main objective in proportion of 30.55%, confirms objective 2A – secondary in proportion of 8.33%, confirms objective 2B – secondary in proportion of 75%.

DISCUSSIONS

Each questionnaire applied to each age category has at the end an arithmetical percentage average representing the subjects’ receptivity to completing the questionnaires for the purpose of statistical processing of the objectives (confirmation or disconfirmation).

In the age category **15-19 years female gender**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient is perceived as half of the average percentage, the certainty of the fact that there is a fear of irradiation is not proven [1], and the radiological image that demonstrates orodental health precariousness entails the need for rehabilitation in a percentage that considerably exceeds the average.

In the age group of **20-29 years, female gender**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, the certainty of the fact that there is a fear of irradiation is not proven [1], and the radiological image demonstrating poor orodental health attracts the need for rehabilitation in a percentage that slightly exceeds the average.

In the age category **30-39 years female gender**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the appearance of the first percentages, which proves the certainty of the fact that there is a fear of radiation among patients[12] and the radio-

logical image that demonstrates an orodental health precariousness entails the need for rehabilitation in a percentage that considerably exceeds the average [6].

In the age category **40-49 years female**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages (lower than the previous category) which proves the certainty of the fact that there is a fear of radiation among patients [12] and the image X-rays that demonstrate poor orodental health entail the need for rehabilitation in a percentage that is considerably close to the maximum [8].

In the age category **50-59 years female**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages (lower than the previous category) which prove the certainty of the fact that there is a fear of radiation among patients [12] and the radiological image demonstrating poor periodontal health entails the need for rehabilitation in a percentage that considerably exceeds the average [8].

In the **60+ years female age** category, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages (identical to that of the 40-49 years age category) which proves the certainty of the fact that there is the fear of radiation among patients [12] and the radiological image that demonstrates a poor periodontal health entails the need for rehabilitation in a percentage that is considerably close to the maximum [10].

In the age category **15-19 years male**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the appearance of the first percentages, which proves the certainty of the fact that there is a fear of radiation among patients and the radiological image that demonstrates an orodental health precarious situation entails the need for rehabilitation in a percentage that slightly exceeds the average.

In the age category **20-29 years male gender**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, the certainty of the fact that there is a fear of irradiation is not proven and the radiological image that demonstrates a poor periodontal health entails the need for rehabilitation in a percentage that is slightly above the average.

In the age category **30-39 years male**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the appearance of slightly more consistent percentages (higher than all age and gender categories in the entire study) that prove the certainty of the fact that there is a fear of radiation among patients [12] and the radiological image that demonstrates poor periodontal health entails the need for rehabilitation in a percentage that considerably exceeds the average [6,9,11].

In the age category **40-49 years male**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages, which proves the certainty of the fact that there is a fear of radiation among patients [12] and the radiological image that demonstrates a poor orodental health entails the need for rehabilitation in a percentage that slightly exceeds the average.

In the age category **50-59 years male gender**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages, which proves the certainty of the fact that there is a fear of radiation among patients [7], and the image radiology that demonstrates poor periodontal health entails the need for rehabilitation in a percentage that slightly exceeds the average.

In the age category **60+ years male**, the quantification of the impact of performing and communicating the results of radiological investigations on the patient does not exceed the average, we can notice the discrete appearance of some percentages, which proves the certainty of the fact that there is a fear of radiation among patients and the radiological image that demonstrates a healthy poor periodontal health entails the need for rehabilitation in a percentage that considerably exceeds the average [8].

CONCLUSIONS

Subjects' receptivity to completing the questionnaires is higher in the case of female subjects and exceeded the percentage of 35% (for both sexes).

The quantification of the impact of performing and communicating the result of radiological investigations on the patient is understood and appreciated by each gender separately with a discrete advantage attributed to the female sex.

Proving the certainty of the fact that there is a fear of radiation among patients, although it is not confirmed in some age categories (female and male) is adjudicated by male subjects.

Female patients are more receptive to the information provided by the radiological image demonstrating poor periodontal health. Female subjects are more aware of the need to perform oral rehabilitation.

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According to our study, the impact of performing and communicating the result of radiological investigations is in the area of an average percentage of 30.71% (arithmetic average for both sexes and all age groups).

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