

Article

Oral Pathologies in Migrants: The Experience of the “PROTECT” Project in 3023 Patients

Gaspare Palaia ^{1,*}, Maurizio Bossù ¹, Nicola Pranno ^{1,*}, Massimo Ralli ², Alice Bruscolini ², Mauro Capocci ¹, Gianfranco Gaimari ¹, Federica Macali ¹, Denise Corridore ¹, Luisa Cotticelli ¹, Francesco Covello ¹, Michele Ahmed Antonio Karaboue ¹, Stefano Di Carlo ¹, Umberto Romeo ¹, Livia Ottolenghi ¹ and Antonella Polimeni ¹

¹ Department of Oral and Maxillofacial Sciences, Sapienza University of Rome, 00161 Rome, Italy

² Department of Sense Organs, Sapienza University of Rome, 00185 Roma, Italy

* Correspondence: gaspare.palaia@uniroma1.it (G.P.); nicola.pranno@uniroma1.it (N.P.)

Abstract: Introduction: The number of people with migrant status living in Europe is proliferating. Most of the refugees in Italy come from war zones, and many of them denounce having been victims of persecutory acts in their country of origin. Highly cultured migrant populations have shown better results and oral health behaviour than those who were poorly cultured. The PROTECT project aimed to build a network for the early management of head and neck pathologies among refugees and migrants, promoting the dissemination of correct information about the prevention and treatment of these pathologies. Materials and methods: A national cross-sectional study among the refugees and migrant population in the Lazio region, Italy, from February 2018 to September 2021 was performed. The oral health of 3023 participants was investigated within a network of 56 reception centres and cultural associations. Data collected via an oral health survey questionnaire gathered information on participants' demographic factors, migration status and dental behaviours and clinical examinations of the participants with the help of mouth mirrors, periodontal probes and artificial light. Results: The mean age was 31.6 ± 13.1 , and among all the subjects, 2058 were male (68.1%) and 965 were women (41.9%). Most participants were born in Nigeria, followed by Bangladesh, Pakistan, Somalia, Mali and Senegal. The overall oral pain prevalence was 48.2%. The prevalence of patients claiming poor oral hygiene was 32.4%; 36.2% of the subjects consumed high amounts of sugar; and 26.7% saw their dentist for a check-up in the last year. At the clinical examination, 68.9% of patients had caries experience (considering decay of deciduous teeth, and caries of permanent teeth and teeth with fillings), with 32.2% showing pulpal involvement. Low levels of oral hygiene were also found at the clinical examination, with 46.5% of patients presenting plaque and calculus. The trend of the DMFT index was found to be 5.41. Good periodontal health (CPI = 0) was present in approximately 33.5% of patients. The CPI = 1 index reported bleeding from gingivitis in 37% of patients; tartar was found in 27% of patients (CPI = 2). The percentage of patients with CPI = 3 was 3.6%. Just over half (52.2%) of the migrants examined had malocclusion, and only 0.7% had a malocclusion in treatment. Conclusions: The goal to be achieved is to develop education and prevention programs for head-neck diseases, and perhaps even more. The first step towards this goal can be removing the obstacles migrants encounter in accessing health care.

Keywords: migrants; vulnerability; assistance; hospitality; minors; dentistry; inclusion



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1. Introduction

The number of people with migrant status living in Europe is proliferating. According to the United Nations High Commissioner for Refugees (UNCHR), the number of refugees reached 84 million worldwide in 2021. Most of the refugees in Italy come from war zones, and many of them denounce having been victims of persecutory acts in their country of origin [1]. The reasons that lead people to flee are: conflict, COVID-19, poverty, political

instability and increased globalisation [2]. Over the years, it has been observed that migrants from middle- and low-income countries migrate to high-income countries such as the USA, Canada, Australia, and those in Europe. Several factors help to define migrants as vulnerable: health risks before, during, and after migration; a disease profile different from that of the host country population; and barriers to accessing health services in host countries [3]. In the same way, it has become increasingly evident how culture, beliefs, and ethnic habits can influence oral health practices in migrants [4]. Highly cultured migrant populations have shown better results and oral health behaviour than those poorly cultured [5]. Moreover, language, social, and economic barriers make access to care in public health institutions difficult. Because of the high costs for treatment in private facilities, there is often a considerable incidence of dental and oral disease in migrant patients. Bad oral health could affect the quality of life, as it could interfere with daily activities such as eating and talking. In addition, untreated oral health problems may pose severe risks to the health of older people, including malnutrition, strokes, heart disease, pneumonia, and oral and pharyngeal cancers [6]. For all these reasons, new intervention strategies, such as the PROTECT (Patologie del distretto Testa-Collo nei migranTi. Dalla formazione degli operatori alla diagnosi precoce e presa in carico del paziente: Network Odontoiatrico • Oftalmologico • Otorinolaringoiatrico • Maxillo-Facciale) project, were created to protect the health of vulnerable applicants and holders of international protection. The PROTECT project was funded by the Asylum, Migration, and Integration Fund (FAMI) 2014–2020 of the Ministry of the Interior and co-financed by the European Union. On the one hand, PROTECT's activities are concerned with screening actions directly at reception centres or organisations that deal with refugees and migrants, and subsequently taking early charge of cases with pathologies to be treated. On the other hand, training and awareness-raising activities both for healthcare personnel (including those in training) and for the personnel of reception centres are also areas of concern.

Patients with treated vulnerabilities were minors, unaccompanied foreign minors, disabled people, pregnant women, single parents with minor children, victims of trafficking, people with illnesses or mental disorders, and people who have been tortured, raped or other forms of psychological, physical, and sexual violence.

2. Materials and Methods

The PROTECT project aimed to build a network for early management of head and neck pathologies among refugees and migrants, promoting the dissemination of correct information about the prevention and treatment of these pathologies. A national cross-sectional study among the refugees and migrant population present in the Lazio region, Italy, from February 2018 to September 2021 was performed. The oral health of 3023 participants was investigated within a network of 56 reception centres and cultural associations. The “PROTECT” project was approved by the Department of Oral and Maxillofacial Sciences, Sapienza, University of Rome (Protocol identifying number: 0000839 on 2 October 2018). The protocol was in accordance with the 1975 Declaration of Helsinki on medical protocols and ethics and its later amendments.

2.1. Data Collection

Data collected via an oral health survey questionnaire gathered information on participants' demographic factors, migration status, and dental behaviours; clinical examinations of the participants were performed with the help of mouth mirrors, periodontal probes, and artificial light. The interviews and oral examinations were performed by trained and calibrated dentists of the Department of Oral and Maxillofacial Sciences, Sapienza, University of Rome.

The screenings took place at both the premises of the reception centres and the premises of the Policlinico Umberto I, a mobile vehicle was used specifically for visits. The recording of the pathologies found was carried out through the use a screening folder, with red or yellow codes, depending on the severity of the disease.

2.2. Questionnaire Information

The questionnaire was administered individually through interviews including the following areas of interest:

1. Sociodemographic characteristics: first name; surname; gender; date of birth; age; country of origin.
2. Dental health-related behaviours: have you ever had an injury in the head and neck region? (no/yes); Do you brush your teeth at least twice a day? (no/yes); Do you eat a lot of foods that are highest in sugar? (no/yes); Do you have pain in your mouth right now? (no/yes); Have you visited the dentist in the past year? (no/yes).

2.3. Clinical Examination

The subjects were examined in the cultural associations, in the reception centres, or in specially equipped motor vehicles for evaluation of the head and neck region. Three examiners were calibrated during the examinations on the first 50 patients and generated a good intra-class correlation coefficient (Kappa = 0.84, range: 0.75–0.91). The dependent variables investigated were: the sum of decayed, missing, and filled permanent teeth (the DMFT index); periodontal disease (periodontal health, gingivitis, suspected periodontitis); the cumulative periodontal index (CPI); the presence of oral mucosal lesion (yes/no); the presence of malocclusion (yes/no).

The intraoral clinical evaluation was performed on each patient using a sealed sterilised kit consisting of a mirror and a disposable probe, and cotton rolls to dry the dental surfaces, with the patient lying down under a good light source (natural light and fluorescent lamp). Second-level examinations, such as orthopantomographic radiography, were requested for the diagnosis of carious lesions (not detectable in the extraoral clinical examination) and any anomalies in the number and position of the dental elements, and then carried out in the relevant competent departments at the Umberto I Polyclinic. The data collected were recorded in the patient's medical record.

2.4. Data Analysis

Data were evaluated using standard statistical analysis software (version 20.0, Statistical Package for the Social Sciences, IBM Corporation, Armonk, NY, USA). A database was created using Excel (Microsoft, Redmond, WA, USA). Descriptive statistics, including mean \pm SD values and percentages were calculated for each variable.

The following continuous and categorical variables were explored: age, gender, nationality, history of trauma to the oral region, oral pain, inadequate oral hygiene, presence of oral neoformations, presence of pulp exposure, presence of fistulas, presence of abscess, presence of root surface exposure, the plaque index, and the DMFT scores. Multiple linear regression analysis was performed to ascertain the effects of independent variables on the DMFT scores. Statistical significance was set at $p \leq 0.05$.

3. Results

A total of 3023 participants were examined and interviewed. The mean age was 31.6 ± 13.1 , and among all the subjects, 2058 were male (68.1%) and 965 were women (41.9%). Most participants were born in Nigeria, followed by Bangladesh, Pakistan, Somalia, Mali and Senegal (Figure 1). The overall oral pain prevalence was 48.2%. The prevalence of patients who claimed poor oral hygiene was 32.4%; 36.2% of the subjects consumed high sugar; and 26.7% saw their dentist for a check-up in the last year. At the clinical examination, 68.9% of patients had caries experience (considering decay of deciduous teeth, and caries of permanent teeth and teeth with fillings), with 32.2% showing pulpal

involvement. Low levels of oral hygiene were also found at the clinical examination, with 46.5% of patients presenting plaque and calculus. The trend of the DMFT index, which expresses the mean value of dental pathology, was found to be 5.41, determined by the carious component (Decay: 2.21), the lack of permanent teeth (Missing: 1.78), and the teeth with fillings (Filling: 1.42) (Figure 2). The multiple regression model statistically significantly predicted an increase in DMFT scores correlated with an increase in age (p -value = 0.003) (Table 1). Periodontal health has been expressed with the CPI (Community Periodontal Index) when going to evaluate gingival bleeding, calculus, and periodontal pockets (3 mm < PD < 6 mm). Good periodontal health (CPI = 0) was present in approximately 33.5% of patients. The CPI = 1 index reported bleeding from gingivitis in 37% of patients; tartar was found in 27% of patients (CPI = 2). The percentage of patients with CPI = 3 was 3.6%. Just over half (52.2%) of the migrants examined had malocclusion, and only 0.7% had a malocclusion in treatment.

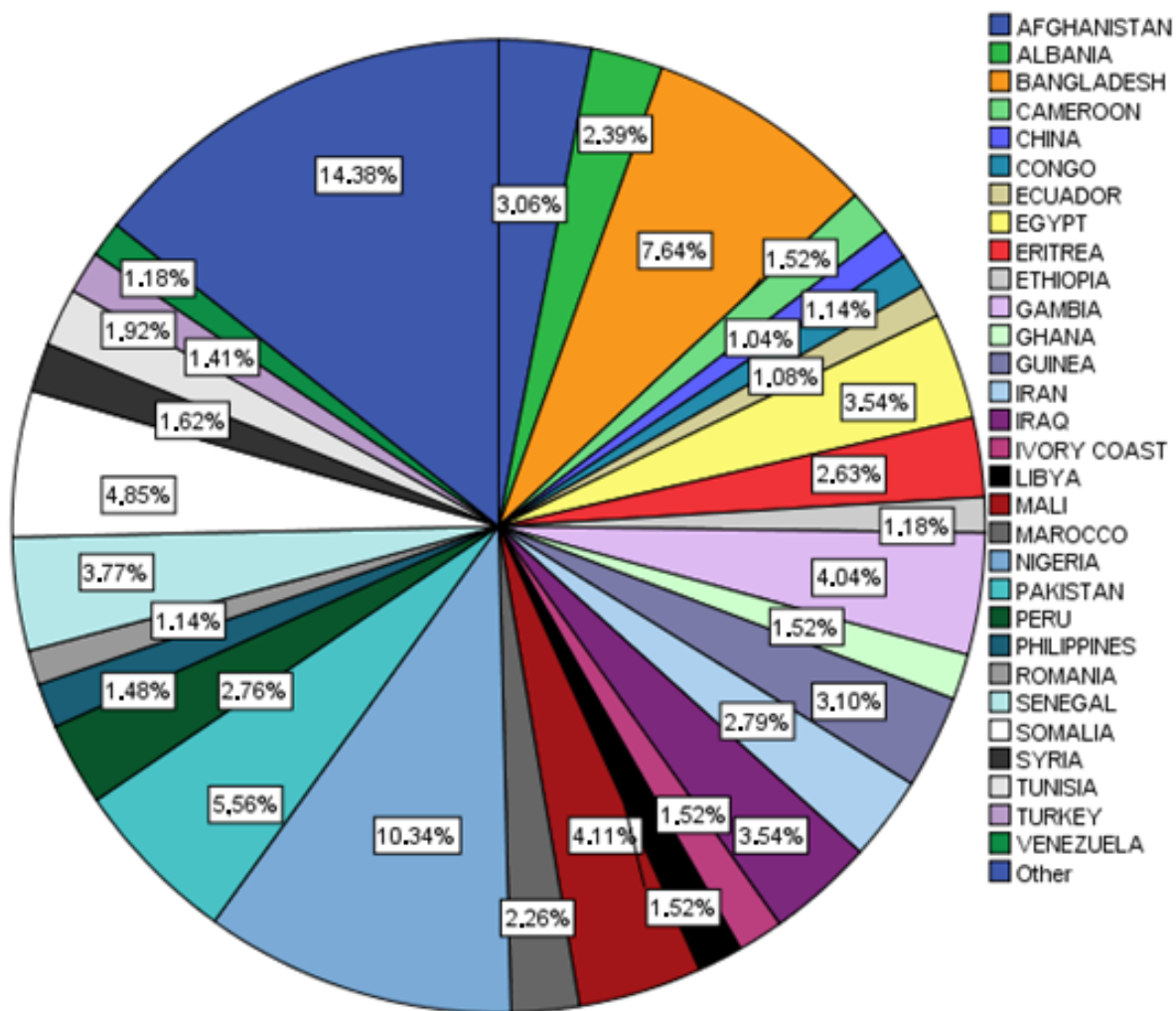


Figure 1. Percentage of subjects coming from different countries.

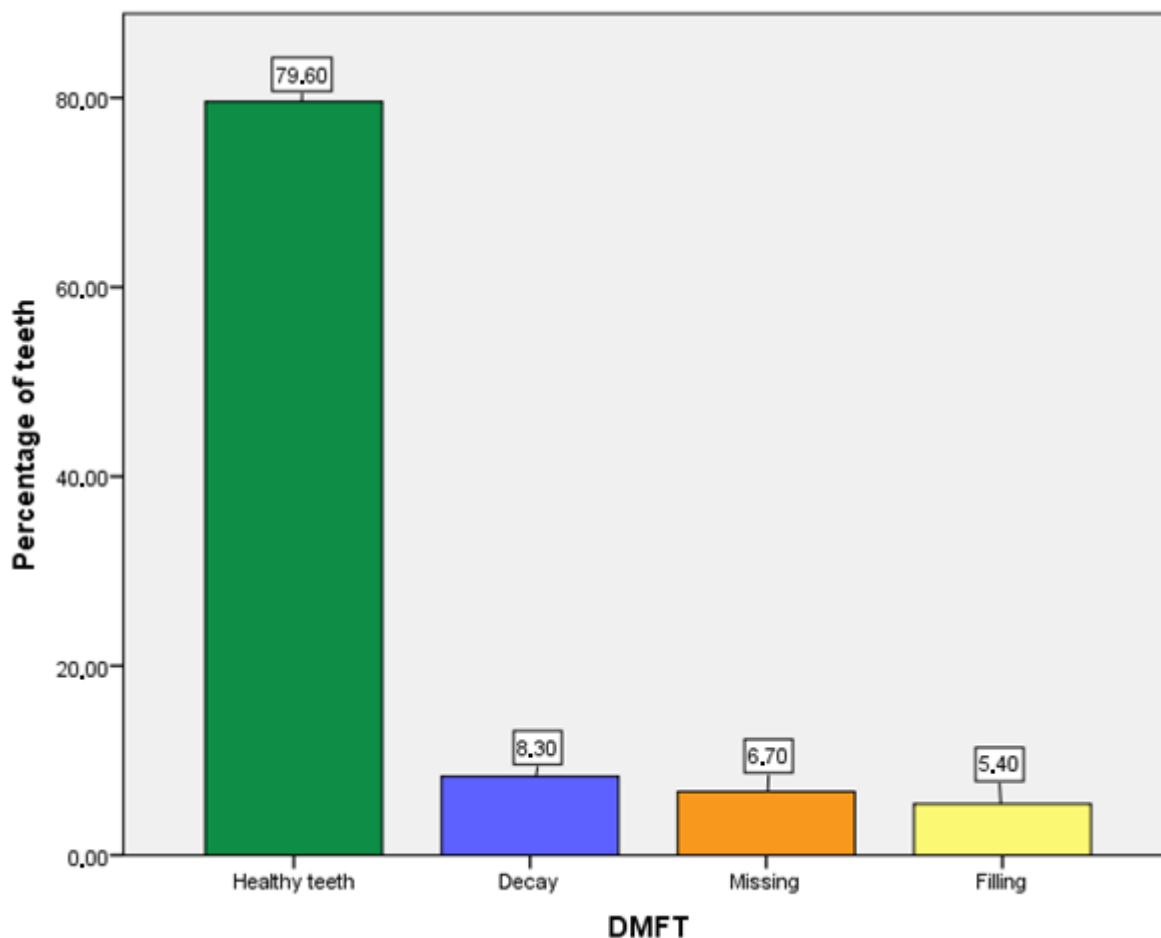


Figure 2. Percentage of the healthy, decayed, missing, and filled teeth on a total of 3023 patients evaluated.

Table 1. Multiple linear regression results for DMFT scores.

DMFT Scores	β Coefficient	95% C.I. for β		SE β	<i>p</i> -Value
		Lower	Upper		
Age	0.090	0.035	0.186	0.153	0.003
Gender	0.360	−0.886	2.645	0.053	0.552
Presence of oral pain	0.730	0.154	1.405	0.221	0.363
Inadequate oral hygiene	0.367	0.106	0.607	0.359	0.103
Plaque index	0.227	−0.004	0.458	0.182	0.084

Note: β = unstandardised regression coefficient; SE β = standard error of coefficient; C.I. = confidence interval.

4. Discussion

In recent years, the prevalence of caries and periodontal disorders in industrialised countries has decreased in adults and children due to the use of preventive measures. However, the data collected by our screening did not show the same situation between migrants and asylum seekers. Data collected from the literature show that the migrant status may be related to a higher prevalence of dental caries [7–13] and a lower periodontal condition [14–16]. Difficulties ensuring access to basic needs for migrant populations, such as food, water, sanitation, and health care, have been documented in the literature [17]. Research conducted in Colombia in 2019 [18] has suggested and demonstrated that oral health is considered a secondary problem for vulnerable people who have to change their lifestyle and adapt to another culture. However, several studies [19,20] show that

acculturation, defined as “people’s lifestyle and behavioural changes when they move from one culture and adapt to another culture, usually because of immigration”, affects oral health. Refugees and asylum seekers have difficulty gaining access to oral health care [21]. The health system, society, and personal behaviour in the area of oral health determine access to health care services. The health policy of the host country is a crucial element in determining access to oral health care. The highest prevalence of caries in the group of migrants in the research of Ferrazzano et al. [22] was associated with difficulties in gaining access to health services. Al-Ani et al. (Germany) [23] noted in their study that the incidence of oral disorders is greater in people with low socioeconomic status, such as asylum seekers who find themselves having to overcome many difficulties to start their lives again in a foreign country. The study by Salim et al. [24] reported that pain was the most commonly presented disorder in 444 patients, stating that more than half of the dental treatments carried out were extractions, 74.1% of which were due to caries. Similarly, pain was a common symptom reported by participants in the research of Saadeh et al. [25], and more than half of the participants reported needing dental care, but not being able to receive it given their low socioeconomic status. Research by Zinah et al. [26] shows that periodontal disease and dental caries are the most frequently assessed study conditions. Salim et al. [27] analysed oral hygiene practices among refugees, noting that most brushed their teeth less than twice a day, thus having poor oral hygiene. The oral hygiene practices and behaviours of parents inevitably directly influence the oral health of children. Literacy and parents’ education regarding good oral health practices may reduce the dmft/DMFT value for their children [28]. A study conducted in Canada between 2013 and 2016 by Moreau et al. [29] found that approximately 60% of refugee children had never visited a dentist before while most Canadian counterparts had seen a dentist in the last year. In our study, the figure is even more worrying as only a small percentage had performed a visit in the last year. Finding higher dmft/DMFT values and more common anterior cross-bites in refugee children, no differences were noted from other types of malocclusion. This project shows how the problem of the poor oral health of migrants exists and is widely documented in the literature. As oral health strongly influences the quality of life, it is necessary to make oral health services more easily accessible to persons in a vulnerable state under the status of migrant [30]. The screening action is carried out directly in reception centres and/or organisations that deal with refugees and migrants in the Lazio region, making it possible to take a snapshot of oral health at the time of legal acceptance of migrant patients and to highlight a request for necessary care, as also found in the literature. More than half of the subjects that were examined experienced caries with painful symptoms at the time of the visit as a result of an impossibility of treatment in the countries of origin and difficulty in accessing the National Health Service due not only to language barriers but also to a delay in identifying the legal recognition that facilitates access. The incidence of caries in our sample is also linked to poor hygiene, as well as to a high intake of sugar, present in approximately half of the sample, although periodontal problems are not one of the prevalent problems. In line with the literature, the data show that malocclusions, detected in half of the sample, are almost entirely not treated, due to socioeconomic status and access difficulties.

The need for a project such as PROTECT is to improve the quality of life of these patients after the resolution of the discomforts, often linked to acute painful symptoms of an inflammatory/infectious nature, which, without early intervention, could lead to even more severe problems (e.g., neoplasms).

In the present study, it is important to consider the high DMFT score (5.4), likely due to a “westernization” of the diet favouring caries. Furthermore, worrying is the fact that the percentage of missing teeth (M) or still decayed (D) is higher than the treated teeth (F), confirming the need for a campaign to prevent and treat carious pathology in this category of vulnerable people [31–33]. Moreover, this score contrasts with the values observed in the epidemiological study of Vano et al. [34], in which the authors reported in a cohort of adult Italian patients an approximate DMFT score of 4. This difference may be associated

with the absence of healthy structures to treat and prevent oral pathologies in the country of origin.

5. Conclusions

PROTECT has been an innovative project of fundamental importance for the beneficiaries, having the ability to involve approximately 4000 people, including operators of the centres, patients and clinicians. In this project, they found a point of reference previously unthinkable. Knowledge, prevention, and management of head–neck diseases (which are often painful and disabling in these patients who, for contingent reasons related to their condition as migrants, are usually neglected) has led to an improvement in the quality of life of these patients. In addition, the PROTECT project not only helped multiple underprivileged people but also provided an understanding of the pathologies that most commonly occur among migrants. This will make it possible in the future to create even more targeted and specific and, therefore, more efficient programs.

So, we can conclude that:

- Dental pathologies (especially untreated carious lesions or malocclusions) in migrants are unfortunately widespread and often neglected.
- Prevention and early intervention avoid hospitalisations and worsening problems.
- PROTECT has been a point of reference for patients and operators of the reception centres.

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Institutional Review Board Statement: The “PROTECT” project was approved by the Department of Oral and Maxillofacial Sciences, Sapienza, University of Rome (Protocol identifying number: 0000839 on 2 October 2018). The protocol was in accordance with the 1975 Declaration of Helsinki on medical protocols and ethics and its later amendments.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

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