

# Vestibular symptoms referred to otorhinolaryngologist for primary care in the city of Recife

Sintomas vestibulares encaminhados ao otorrinolaringologista pela atenção primária da cidade do Recife

*Síntomas vestibulares referidos al otorrinolaringólogo por atención primaria en la ciudad de Recife*

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## Abstract

**Introduction:** Primary Care is the user's "gateway" to the Unified Health System: if the physician has difficulty conducting the case, they refer it to a specialist. Otorhinolaryngology is one of the specialties that receives referrals the most, with long waiting time in this setting. **Objective:** To estimate the frequency of complaints of dizziness and suspected vestibular disease in referrals of patients awaiting consultation with an otorhinolaryngologist. There are few studies addressing this topic in the literature, and this survey is important because it helps design the profile of these patients and plan public health actions. **Methods:** Observational, longitudinal, descriptive study based on collection of secondary data from the Regulatory System of the Health Department of the City of Recife. Requests from Family Health Strategy (FHS) physicians for the Otorhinolaryngology service in October-November 2019 were included, and those who had been on the waiting list since June-July 2018. **Results:** The frequency of referrals for dizziness and suspected vestibular disease was 22.5% of all requests for Otorhinolaryngology. The waiting time was one year and four months. most patients were women (74.7%) and aged over 60 years (48.3%). The reasons for referrals were: tinnitus (43.2%), labyrinthitis (20%), multiple symptoms (17.3%), dizziness (11.6%), vertigo (3.9%), labyrinthopathy (3.6%), and benign paroxysmal positional vertigo (0.6%). Symptoms increase with age. **Conclusions:** The referral rate was compatible with the literature. Tinnitus is a very uncomfortable symptom, common in labyrinthine diseases and other pathologies, so the high frequency of solicitation. The term labyrinthitis does not always refer to vestibular neuronitis, but it can erroneously be used for any vertiginous syndrome, which may justify a high referral rate to the detriment of other vestibular pathologies. Continuing education in Primary Care is important for both the correct diagnosis and the appropriate request for interconsultation. New strategies to reduce waiting times are needed such as increasing the supply of specialist services, demanding qualification, and optimizing the regulatory system.

**Keywords:** Dizziness. Vertigo. Referral and consultation. Primary health care. Waiting lists. Labyrinthitis.

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## Resumo

**Introdução:** A Atenção Primária é a “porta de entrada” do usuário ao Sistema Único de Saúde. Caso o médico tenha dificuldade em conduzir o caso, ele encaminha-o a um especialista. A otorrinolaringologia é uma das especialidades que mais recebe referências, com longo tempo de espera em nosso meio. **Objetivo:** Estimar a frequência das queixas de tontura e suspeita de doença vestibular nos encaminhamentos dos pacientes que aguardam consulta com otorrinolaringologista. Há poucos estudos semelhantes na literatura, e esse levantamento é importante para traçar o perfil desses pacientes e planejar ações de saúde pública. **Métodos:** Estudo observacional, longitudinal, descritivo, baseado na coleta de dados secundários do Sistema de Regulação da Secretaria de Saúde da Prefeitura do Recife. Foram incluídas as solicitações dos médicos da Estratégia Saúde da Família para o serviço de otorrinolaringologia em outubro-novembro de 2019, que estavam na fila de espera desde junho-julho de 2018. **Resultados:** A frequência dos encaminhamentos por tontura e suspeita de doença vestibular foi 22,5% de todas as solicitações para otorrinolaringologia. O tempo de espera foi um ano e quatro meses. A maioria era de mulheres (74,7%) e idosos acima de 60 anos (48,3%). Os motivos dos encaminhamentos foram: zumbido (43,2%), labirintite (20%), múltiplos sintomas (17,3%), tontura (11,6%), vertigem (3,9%), labirintopatia (3,6%) e vertigem posicional paroxística benigna (0,6%). Os sintomas aumentam com a idade. **Conclusão:** A taxa de encaminhamento foi compatível com a literatura. O zumbido é um sintoma muito incômodo, comum tanto nas doenças do labirinto quanto em outras patologias, por isso a alta frequência de solicitação. O termo labirintite nem sempre se refere à neuronite vestibular, mas erroneamente pode ser usado para qualquer síndrome vertiginosa, o que pode justificar a alta taxa de encaminhamento em detrimento de outras vestibulopatias. A educação continuada na Atenção Primária é importante tanto para o diagnóstico correto quanto para a solicitação apropriada da interconsulta. É preciso novas estratégias para diminuir o tempo de espera, como o aumento da oferta de serviços de especialistas, a qualificação da demanda e a otimização do sistema de regulação.

**Palavras-chave:** Tontura. Vertigem. Encaminhamento e consulta. Atenção primária à saúde. Listas de espera. Labirintite.

## Resumen

**Introducción:** La atención primaria es la “puerta de entrada” del usuario al Sistema Único de Salud, si el médico tiene dificultades en el manejo del caso lo deriva a un especialista. La otorrinolaringología es una de las especialidades que más derivaciones recibe, con un largo tiempo de espera en nuestro país. **Objetivo:** Estimar la frecuencia de quejas de mareo y sospecha de enfermedad vestibular en las derivaciones de pacientes en espera de consulta con un otorrinolaringólogo. Existen pocos estudios similares en la literatura, y esta encuesta es importante para perfilar el perfil de estos pacientes y planificar acciones de salud pública. **Métodos:** Estudio observacional, longitudinal, descriptivo, basado en la recolección de datos secundarios del Sistema de Regulación de la Secretaría de Salud del Municipio de Recife. Se incluyeron solicitudes de médicos de la Estrategia Salud de la Familia, para el servicio de Otorrinolaringología en octubre-noviembre de 2019, y que estaban en lista de espera desde junio-julio de 2018. **Resultados:** A menudo, dos derivaciones por turbidez y suspensión de enfermedad vestibular representaron el 22,5% de todas las solicitudes de Otorrinolaringología. El tiempo de espera fue de un año, cuatro meses. La mayoría eran mujeres (74,7%) y mayores de 60 años (48,3%). Los dos motivos de derivación fueron: acúfenos (43,2%), laberintitis (20%), síntomas múltiples (17,3%), embotamiento (11,6%), vértigo (3,9%), laberintopatía (3,6%) y vértigo posicional paroxístico benigno (0,6%). Los síntomas aumentaron con la edad. **Conclusiones:** la tasa de derivación fue compatible con la literatura. El tinnitus es un síntoma muy incómodo, común tanto en las enfermedades del laberinto como en otras patologías, de ahí la alta frecuencia de solicitud. El término laberintitis no siempre se refiere a neuronitis vestibular, pero se puede utilizar erróneamente para cualquier síndrome de vértigo, lo que puede justificar una alta tasa de derivación en detrimento de otros trastornos vestibulares. La formación continua en Atención Primaria es importante tanto para el correcto diagnóstico como para la adecuada solicitud de interconsultas. Se necesitan nuevas estrategias para reducir los tiempos de espera, como aumentar la oferta de servicios especializados, calificar la demanda y optimizar el sistema regulatorio.

**Palabras-clave:** Mareo. Vértigo. Derivación y consulta. Atención primaria de salud. Listas de espera. Laberintitis.

## INTRODUCTION

Dizziness is a nonspecific symptom that, in the patient’s perception, can have several meanings, even without any direct relationship with labyrinthine dysfunction. In order to standardize the nomenclature of this symptom, the Barany Society’s International Classification of Vestibular Disorders divides it into four main types: vertigo, imbalance, pre-syncope or nonspecific dizziness.<sup>1</sup> Classically, these complaints lead to some diagnostic suspicions: vertigo for labyrinthine diseases, presyncope for cardiac causes, imbalance as a neurological problem, and nonspecific symptoms such as suspected psychiatric causes. Another more current classification is based on the triggers and frequency of dizziness: vertigo/recurrent spontaneous dizziness; vertigo/acute spontaneous dizziness; recurrent vertigo/dizziness with trigger; or chronic persistent dizziness/imbalance.<sup>2</sup> This new approach is considered more practical and more useful

when it comes to organizing differential diagnoses in each category. The vast majority of cases of vertigo are of peripheral origin, triggered by dysfunction of the vestibular system.

The increase in frequency of dizziness/vertigo is related to the aging of the population, and the related costs on health gradually increases whether due to repeated and misdirected consultations at all levels of medical care, or to the excessive use of diagnostic imaging tests and/or emergency care and loss of working days.<sup>3</sup> Thus, the prevalence of vertigo syndrome draws interest in clinical practice for the Family Health Strategy (FHS) physician, and for neurologists, geriatricians, cardiologists and otolaryngologists. Population-based epidemiological studies show that dizziness and vertigo are two of the most common complaints in medicine, affecting approximately 15 to 20% of the world population, with 5% being the vestibular vertigo subtype.<sup>4,5</sup> A systematic review reported a prevalence of dizziness or vertigo between 1.2 and 8.1% of all medical care in Primary Health Care (PHC).<sup>6</sup> These cases are challenging because dizziness is a symptom that is difficult to describe and standardize, and current syndromic classifications are little used by FHS physicians.

The FHS is the citizens' gateway to health services; however, it is not always possible at this level of care to reach a definitive diagnosis. From 8.2 to 22% of patients with dizziness have no specific initial diagnosis.<sup>6</sup> The most appropriate approach, given a condition that is difficult to diagnose and treat, would be referral to a specialist. Studies show that between 30 and 57% of physicians admit they have doubts and seek answers to challenges they face daily.<sup>7</sup> The search for information is motivated by the urgency of a patient's problem or the desire to acquire new knowledge in the hope of improving their clinical practice.<sup>7</sup> If a physician does not feel confident after looking for answers in bibliographic sources, requesting an interconsultation with a specialist is the expected path.

There are few studies in the literature reporting the amount or reasons for referrals from the PHC to Secondary or Tertiary Health Care in Brazil. A study carried out in a city of São Paulo showed that only 4.42% of the total number of visits to basic units were referred,<sup>8</sup> which is similar to other countries' rates.<sup>9,10</sup>

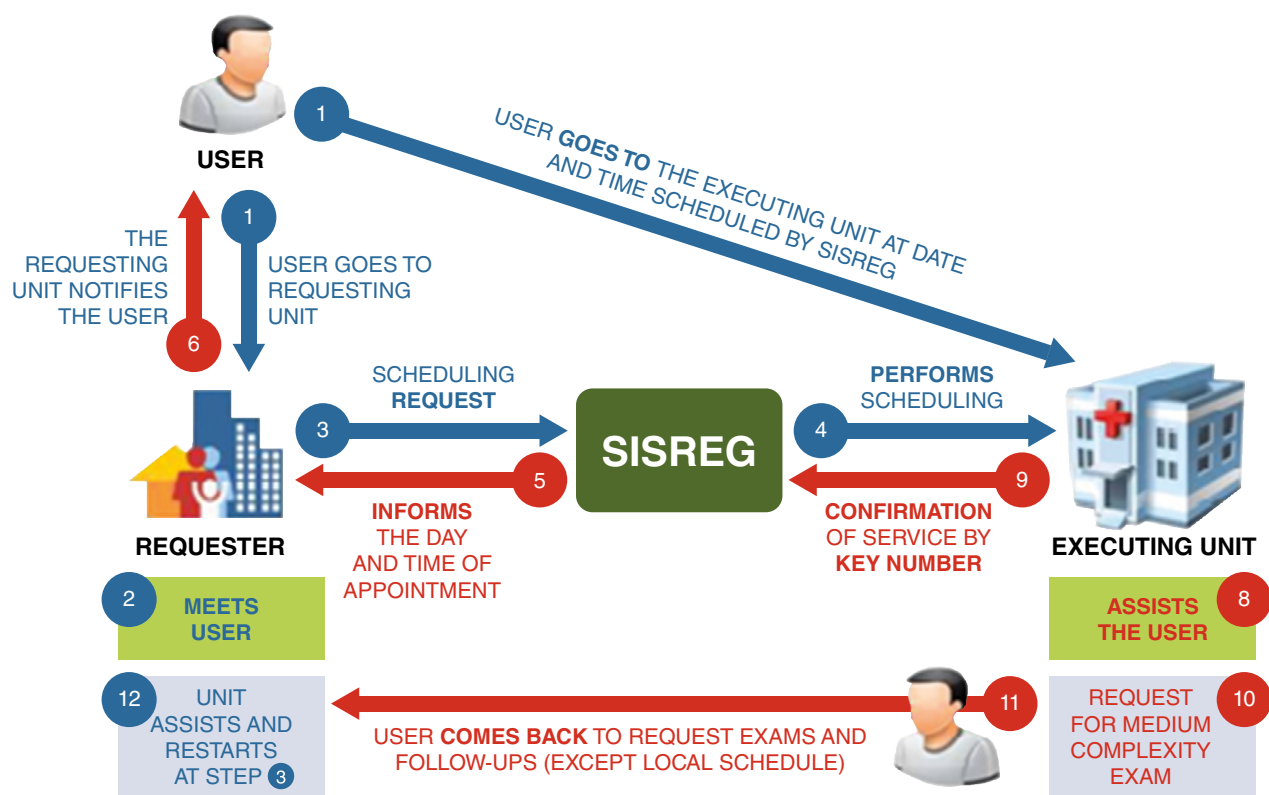
The Regulation System (SISREG) is used in the referral flow of our municipality, an online administrative system of the Ministry of Health created to manage the entire regulatory complex, from the basic network to hospital admissions.<sup>11</sup> The waiting list for consultation with an otolaryngologist is one of the biggest, with about 18 thousand requests for exams accumulated in the SISREG.<sup>12</sup> In this setting, what would be the number of patients with vestibular symptoms waiting for an appointment? How long do they wait for the appointment with an otolaryngologist? The present study carried out a survey of the frequency of dizziness and symptoms correlated with vestibular disease among the reasons for referring patients who have been waiting for more than a year in the Unified Health System (SUS) waiting list for an appointment.

## METHODS

This is a descriptive, longitudinal and observational study, with retrospective collection of secondary data. Data were obtained from the SISREG system through individual access by the author Débora Bunzen, after the agreement of the Telehealth Center/Division of Health Education of the City of Recife. There was no involvement of patients.

The municipality of Recife has approximately 1,646 thousand inhabitants and is located in the state of Pernambuco, northeast of Brazil. The PHC network is made up of 279 Family Health teams, inserted in 132 Family Health Units (FHU), in addition to 22 Traditional Basic Health Units (BHU), also called Health Centers, which cover a population of 1,162,000 people; thus, we have 70.5% coverage by the SUS. SISREG is powered by consultation and examination requests across the entire PHC network. In addition

to the physician, other health professionals can fill out the request, but for this study we considered only requests filled by physicians, whether from the FHU, BHU, general practitioners or specialists in Family and Community Medicine. Return inquiries and requests for children under 14 were disregarded. The referral form data are entered into the system by the requesting unit administrative sector, and the patient enters the SISREG virtual waiting list for an appointment via the municipal regulation center (steps 1, 2 and 3 in Figure 1).<sup>11</sup> The consultation is scheduled and confirmed through SISREG (steps 4,5 and 9 in Figure 1).



**Figure 1.** Simplified flowchart of outpatient scheduling process in the Regulation System.<sup>11</sup>

Data collection was carried out in the virtual waiting list for consultation with an otolaryngologist, in requests for otolaryngology that were entered in June and July 2018. A SISREG filter was used to isolate all requests waiting for a particular specialty, in this case, otorhinolaryngology, as there are referrals for dizziness or vertigo to other medical specialties. After detailed reading of the requests for otolaryngology, all of them included in the reason for the consultation the symptoms of dizziness, vertigo or imbalance, based on the Barany Society's International Classification of Vestibular Disorders, were selected.<sup>1</sup> Terms referring to the most common vestibular syndromes were also searched: Ménière's diseases, benign paroxysmal positional vertigo (BPPV), labyrinthitis/vestibular neuronitis and vestibular migraine. The symptom of tinnitus was also investigated, as it is present in several vertigo syndromes and is a reason for consultation.<sup>10</sup> If several of these symptoms were described together in the request, the patient was considered to have multiple vertigo symptoms, but no specific diagnosis. Each patient could submit only one valid application. As there were informal reports, during consultations at the otolaryngology service and the waiting time for

these patients was about a year, the researchers decided to check the waiting list again in October 2019 to find out how many of the patients with dizziness were still waiting. These cases formed the sample of this study. The personal data of SUS users registered in SISREG were made anonymous. Only information relevant to the research was placed in Google Sheets®, thus creating a database for the researchers. The database used was shared on the Open Science Framework (OSF) platform.

This study was evaluated and approved by the Ethics Committee, opinion 2,736,103, on June 26, 2018.

## RESULTS

The total number of referrals from the PHC to any specialist in this period, according to SIREG-Recife, was 21,057, of which 1,865 were to an otolaryngologist, corresponding to 8.85% of the total. After applying the exclusion criteria, we had 1,492 valid requests for otorhinolaryngologists and, of these, 336 (22.52%) were due to dizziness or vertigo. The mean age was 56.7 years (minimum 15 and maximum 98 years), with 74.70% of the sample being females and 25.30% males. The most common reason for referral was tinnitus (43.2%), followed by labyrinthitis (20%). The results are shown in Table 1 and Figure 2.

## DISCUSSION

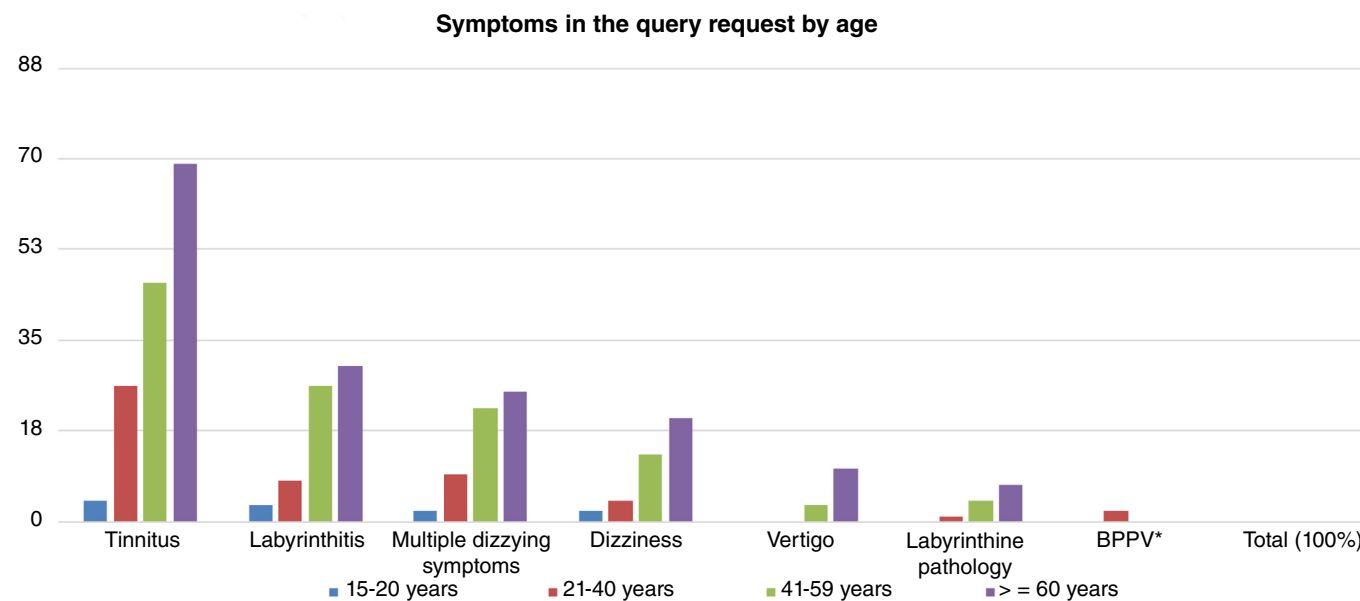
Peripheral vestibular disorders are common diseases in clinical practice and one of the main reasons for referral and counter-referral in the regulation system. In our study, only referrals to otolaryngologists were analyzed, of which 22.5% were suspected vestibular disease. Most patients waiting in line were elderly and women, a result already described in other studies, as this symptom is more frequent in this population.<sup>4,5-13</sup> When faced with a case of dizziness or suspected vertigo syndrome, it is clear, according to the literature, that the referral rate is highly variable.<sup>8-10</sup> A systematic review showed that patients with dizziness treated in PHC have a referral rate between 22 and 48%.<sup>6</sup> Bird et al.<sup>10</sup> reported a rate of 16% of patients referred to specialists due to dizziness, 36% of them to an otolaryngologist. This study is a pioneer in evaluating the frequency of dizziness among the reasons for referral to the otolaryngology system, which shows the impact of this type of symptom on the SUS waiting list for this specialty in our city.

According to our results, the most common reason for referral was tinnitus (43.2%), especially among the elderly (Figure 2). As this is a chronic symptom that causes a lot of discomfort to the patient, we believe that tinnitus motivates the patient to actively and diligently seek care. The physician, in turn, values more

**Table 1.** Reasons for requesting an appointment with an otolaryngologist related to vestibular symptoms on the waiting list.

Reasons for referrals	Number (n)	Percentage (%)
Tinnitus	145	43.2
Labyrinthitis	68	20.0
Multiple dizzying symptoms*	58	17.3
Dizziness	39	11.6
Vertigo	13	3.9
Labyrinthine pathology	12	3.6
Benign paroxysmal positional vertigo	2	0.6
Total	336	100

\*Description of multiple simultaneous symptoms, such as dizziness, tinnitus, dizziness or imbalance.



BPPV: benign paroxysmal positional vertigo

**Figure 2.** Reasons related to vestibular symptoms for requesting an appointment with an otolaryngologist, according to age group.

the complaint and, in order to rule out a serious pathology, makes the referral. This might justify the higher frequency of tinnitus as a reason for consultation in our study. The literature points out that the proportion of patients referred is significantly higher among those who consulted at least twice for the same complaint and those whose symptoms lasted a year or more, as in the case of tinnitus.<sup>10</sup>

Lastrucci et al.<sup>14</sup> analyzed tinnitus and vestibulocochlear disease separately in order to identify predictive factors for falls in the elderly, finding a prevalence of 41.7% among patients with tinnitus. When there was an association between cognitive impairment, multiple comorbidities and tinnitus, the risk of falling was four times higher.<sup>14</sup> Also according to these authors, tinnitus may be more accurate in predicting the risk of falling than the description of vertigo in medical records.<sup>14</sup> Despite these data, we emphasize that isolated tinnitus, found in the referrals of our study, should be viewed with caution and its relationship with dizziness and vertigo should be further investigated. As there was no information on complementary exams on SISREG, we cannot state whether tinnitus was secondary to vertigo syndromes or other cochlear causes. The succinct or incomplete way the submission was filled out limited our analysis.

Labyrinthitis or vestibular neuritis was the second most frequently referred symptom, about 20% of the reasons for consultation (Table 1) and more common after 40 years of age (Figure 2). Vestibular neuritis is, by definition, an acute inflammation of the vestibular nerve, and the patient may present with symptoms such as sudden vertigo, rotational dizziness, imbalance, nausea and vomiting.<sup>1</sup> It is an acute spontaneous vertigo, in most cases self-limited, with a benign course if treated correctly.<sup>2</sup> Vestibular neuritis in PHC varies between 0.6 and 24%.<sup>6</sup> This high variability depends on the PHC demand profile and the standardization of diagnosis of vertigo syndromes, as this type of patient usually seeks care in emergency services.<sup>1,2-6</sup>

Interestingly, there was no referral of other labyrinthine disorders such as Ménière's disease or vestibular migraine, only labyrinthitis (20%) and BPPV (0.6%). We should note that the term "labyrinthitis" is used by the lay population to describe any illness that results in rotational dizziness. We agree that, perhaps, this has influenced physicians when filling in the reason for the referral and partly justifies the high frequency of labyrinthitis in our study, without considering other vestibular pathologies.

A tertiary otoneurology center, which receives referrals from both primary and secondary care, found a 4% suspicion rate for labyrinthitis and a 28.2% suspicion rate for BPPV, contrary to our results.<sup>15</sup> BPPV in PHC can vary between 4.3 and 39.5%,<sup>6</sup> because for its diagnosis “bedside tests” are required, which include specific maneuvers (Dix-Hallpike and head-roll test),<sup>2</sup> a skill little mastered by the FHS physicians. Geser and Straumann<sup>16</sup> compared the referral diagnosis with the final diagnosis and, after performing the diagnostic maneuvers, the frequency of BPPV almost doubled. They concluded that especially BPPV, vestibular migraine and multisensory dizziness were underdiagnosed by the PHC physicians.<sup>16</sup> In our setting, a similar situation was noted, as BPPV and other vertigo syndromes were probably underdiagnosed and an aggravating factor was also found: terminology error, which increased the proportion of cases of labyrinthitis.

Our results point to difficulties in the description, by physicians, of symptoms and diagnoses of patients with dizziness, which may have interfered with demand and increased waiting time. Moi Trevisol et al.,<sup>17</sup> when studying the reasons for referral in the city of Porto Alegre, identified 20.6% of avoidable referrals, predominantly those involving lack of knowledge, skills or attitude by the physician.

The sensation of multiple symptoms, such as dizziness, vertigo and imbalance, was the third main cause for referrals, with a frequency of 17.3% (Table 1). Bisdorff et al.,<sup>18</sup> using a self-applied questionnaire, found that 59.2% of respondents had at least one of these three symptoms. Most respondents reported dizziness, vertigo or imbalance at least once a month, in short episodes.<sup>18</sup> This spectrum was more frequent in poly-medicated patients, migraineurs, with vasovagal syndrome, anxiety/depression, motion sickness and agoraphobia.<sup>18</sup> Berk et al.<sup>19</sup> studied women with osteoporosis who performed worse in balance tests when they complained of associated tinnitus, vertigo and hearing loss (presbycusis). It is important for the PHC physician to identify this type of patient, as they need a multidisciplinary approach. Those with multiple symptoms require the physician to identify situations that are manageable in PHC, in order to improve their quality of life while they wait for other consultations.

This study shows that a very long waiting time for an appointment with the otolaryngologist, around one year and four months in the SISREG-Recife line. According to the literature, a long waiting time in vertigo syndromes increases the risk of falls, of going to the emergency room, besides worsening prognosis and increasing healthcare costs.<sup>3</sup> We compared our results with two Brazilian studies on referrals, Mori et al.<sup>8</sup> and Moi Trevisol et al.<sup>17</sup> Mori et al.,<sup>8</sup> in an analysis in Botucatu, São Paulo, observed that the largest number of referrals was for dermatology appointments, with otolaryngology being the fourth most requested, a result similar to that of Moi Trevisol et al.<sup>17</sup> However, the waiting time for a dermatologist was 180 days, while for an otolaryngologist it was approximately 365 days.<sup>8</sup> The wait for an otolaryngologist appointment was close to our result in Recife, which was one year and four months.

We believe that, in some medical specialties, there is a clear imbalance between demand and supply, regardless of the reason for referral. A study carried out with SUS managers pointed out the lack of vacancies for specialists and the gaps in the referral criteria as limiting factors for regulation.<sup>20</sup> The increase in supply of specialists can be seen as a solution to the issue represented by the waiting list.<sup>21</sup>

On the other hand, simply opening more vacancies is not enough. First, one must discover what the real demand of the population is, hence the importance of studies on the waiting list for planning public health actions. The real demand represents not only the number of referrals, but their qualification. Therefore, the present study is relevant.

Given these results, it is important that managers promote continuing education in PHC and invest in teleconsulting for waiting lines.<sup>12</sup> The management could also formulate, together with the physicians involved in the different levels of care, technical criteria of referrals for dizziness syndromes. This would

be essential to qualify the reasons for referral and could contribute to reducing waiting time, whether in our region or in any other region with “bottlenecks” in the regulation system.

On the other hand, the reason for referral is sometimes not just technical, as the precarious work situation in PHC cannot be forgotten.<sup>8,20-22</sup> The large movement of patients and the pressure of those who require a specialist can influence this decision. Bird et al.<sup>10</sup> reported that 9% of patients should have been referred according to the local protocol and were not, while 27% were unnecessarily referred. Both the delay in referring a patient and referrals without criteria are harmful to the user and to the SUS regulation flow itself.

There must be a support network for the FHS physician, as well as better demand and supply management in terms of care aimed to reduce the waiting time for a specialist. It would be interesting to build referral and counter-referral protocols, which do not exist in our city. It is also important to emphasize the resolution of PHC and encourage the acquisition of new skills and competences to address dizziness-related syndromes.

## CONFLICT OF INTEREST

Nothing to declare.

## AUTHORS' CONTRIBUTION

Bunzen, D.: Project management, Formal analysis, Conceptualization, Data curation, Writing – first draft, Writing – revision and editing, Research, Methodology, Supervision, Validation, Visualization. Lima, F.: Conceptualization, Data curation, Writing – first draft, Writing – revision and editing, Research, Methodology, Validation, Visualization. Figueiredo, ME.: Conceptualization, Data curation, Writing – first draft, Writing – revision and editing, Research, Methodology, Validation, Visualization. Fontinele, L.: Conceptualization, Data curation, Writing – first draft, Writing – revision and editing, Research, Methodology, Validation, Visualization.

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