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Original articles

Profile of patients undergoing speech-language therapy in a physical and rehabilitation medicine hospital service

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ABSTRACT

Purpose: to analyze the profile and risk factors of patients attended by speech therapists in a hospital service of physical and rehabilitation medicine (P&RM) of the public health system.

Methods: a retrospective cohort study was carried out. The variables were summarized using frequencies, proportions, and measures of central tendency. Relative risks (RR) were estimated, using the incidence ratio (IC:95%) and the bilateral Fisher's exact test. A level of significance was considered $p < 0.05$.

Results: 23,365 speech therapy activities distributed in 8,416 sessions were carried out between September 2016 to September 2018, with patients admitted to a P&RM service. The activities focused people over 60 years in the areas of swallowing (28.6%) and cognition (11.7%). Age equal to or greater than 60 years was identified as a risk factor for admission, due to cerebrovascular disease of 1.36 (95% CI: 1.24-1.49; $p = 0.001$), and belonging to section B of the National Health Fund (FONASA), 1.37 (95% CI: 1.29-1.46, $p = 0.001$). The RR for respiratory pathology was greater in the winter period: 1.63 (95% CI: 1.50-1.76; $p = 0.001$).

Conclusion: elderly and low-income people are more likely to need speech therapy rehabilitation in the context of P&RM service.

Keywords: Speech, Language and Hearing Sciences; Professional Practice; Physical and Rehabilitation Medicine; Aging; Risk Factors

INTRODUCTION

The scope of the practice of speech therapists is broad, and the role in health adjusts to the legal provisions and epidemiological profiles of each country[1,2]. The service provision domains related to rehabilitation acts represent a strength of doing[3], being the hospital activity working with the adult population a relevant area for experts in human communication and swallowing[4-6].

The evidence indicates that speech therapy is essential in the approach of hospitalized patients with swallowing[7], language and speech disorders[8], subjects with neurocognitive disorders[9,10], severe burns[4], psychiatric patients[11,12], and people who require rehabilitation in the various areas of the profession.

It is relevant to highlight that although one of the preferred results of the rehabilitation work is related to the functional performance of patients, there is also evidence regarding the contribution that rehabilitation work offers in reducing the time of hospital stay and the costs associated with health care[13,14].

The Physical Medicine and Rehabilitation services (P&RM services) represent units where interdisciplinary work is fundamental[15,16], with medical, speech-language therapy, kinesiology, and occupational therapy equipment, among others, which represent instances where therapeutic efforts are focused on the recovery of patients[17] from various units or hospital services[18], functioning as a support unit within the health services.

The characteristics of the patients treated at the P&RM service have been commonly described from a medical perspective, providing relevant information for decision-making in public health[19,20]. However, the type of patients, the number of care, the type of benefit, or the risk factors that contribute to their hospitalization or discharge, such as diagnosis, age, or severity of the disease, have not been detailed[21-24] all of this, concerning the need to require speech therapy.

Having such information can contribute to the prioritization of human and material resources, provide a background for the opening of jobs, guide professional training and offer epidemiological information relevant to speech-language therapy work in the hospital context.

This research aimed to analyze the profile and risk factors of patients attended by speech therapists in a physical and rehabilitation medical service of a complex hospital of the public health system.

METHODS

This research was approved by the Scientific Research Committee of the Dr. Eloísa Díaz Clinical Hospital of La Florida, in Santiago de Chile, Chile. A retrospective cohort study was carried out, examining the monthly statistical data (MSD) of patients attended by speech therapists from the P&RM service of the hospital center.

The universe was made up of all the patients who received speech therapy in the service from September 2016 to September 2018. Considering that the study contemplated secondary sources, all the patients who were enrolled in the REM were included.

The inclusion criteria were to have complete registry information: gender, age, service of origin, medical diagnosis, health forecast, REM diagnosis, and type of speech therapy. As an exclusion criterion, the following was determined: the record of care that did not include speech therapists.

The statistical analysis contemplated the frequency count and use of central tendency measures according to the nature of the variables. The determination of normality was carried out through the skewness-kurtosis test, considering a level of significance $p < 0.05$. The analysis of risk factors was carried out from the calculation of Relative Risks (RR), considering a 95% CI and a bilateral Fisher's exact test equal to or less than 0.05.

The databases were obtained from the hospital statistics department, and no direct information was used from the clinical records of the patients for triangulation purposes.

The information was tabulated in Microsoft Excel 2010 and analyzed in Stata Statistical Software 14 (College Station, TX: StataCorp LP).

RESULTS

Between September 2016 and September 2018, the P&RM service performed 8,416 speech therapy services to hospitalized patients (Figure 1), with a base staff of 132 professional hours per week.

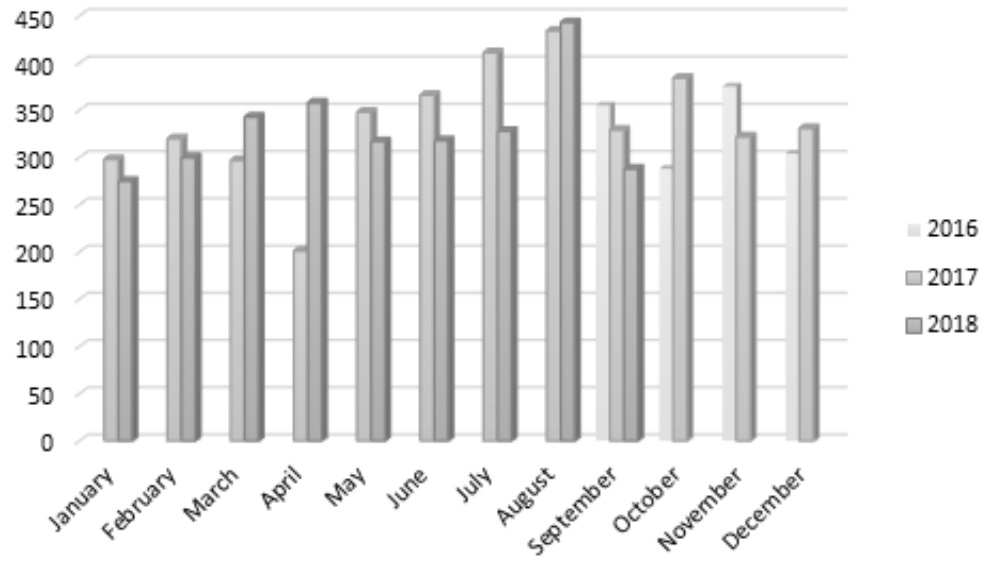


Figure 1. Frequency of speech therapy services from September 2016 to September 2018

After the initial review of the data, 99.03% of them were validated. 50.01% of patients were female, and 49.9% male.

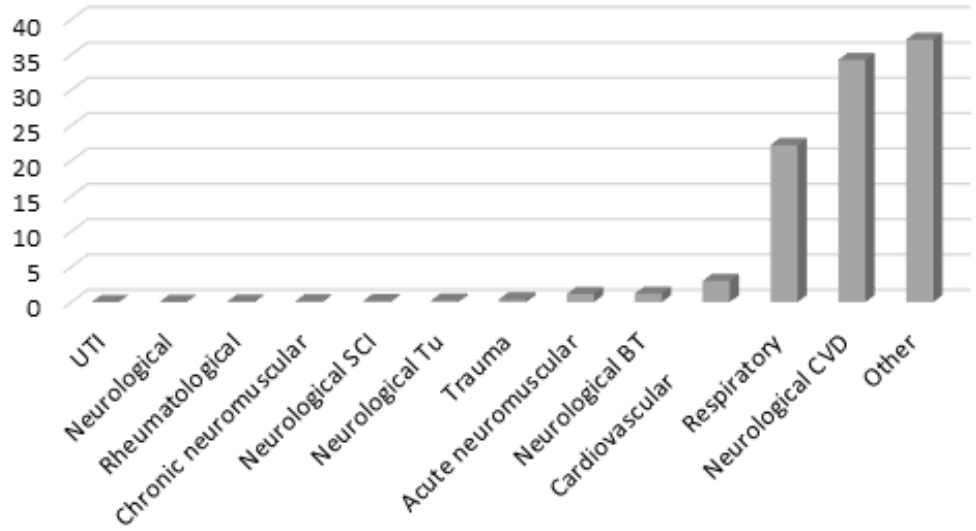
The ages of hospitalized patients included people between the ages of 16 and 80 or older. Speech therapy services were concentrated on subjects aged 60 years or over; it should be noted that 37% of the services were made to individuals over 80 years of age.

The monthly average of speech therapy services delivered to the cohort was 431.8. Regarding the nature of these actions, 18.29% corresponded to new admissions, and the remaining 81.71% to therapeutic intervention activities.

The majority of patients (69.7%) were concentrated in the National Health Fund (FONASA) belonging to section B —that is, individuals with monthly taxable income less than or equal to 250,000 Chilean pesos (CLP). A marginal number corresponded to subjects without health insurance (4.03%), to indigent patients, or those who caused family subsidies (Law 18,020) (belonging to section A of FONASA). The rest of the people were located in sections C and D—that is, monthly taxable income greater than CLP 250,000 and less than or equal to CLP 365,000 and subjects who receive a monthly taxable income greater than CLP 365,001, respectively.

Regarding the service of intra-hospital origin of the patients, 49.9% came from the medium care unit (UCM), 36.59% from the medical-surgical unit (MSU), 13.01% from the Critical Patient Unit (CPU), and 0.5% from Day Hospital (DH).

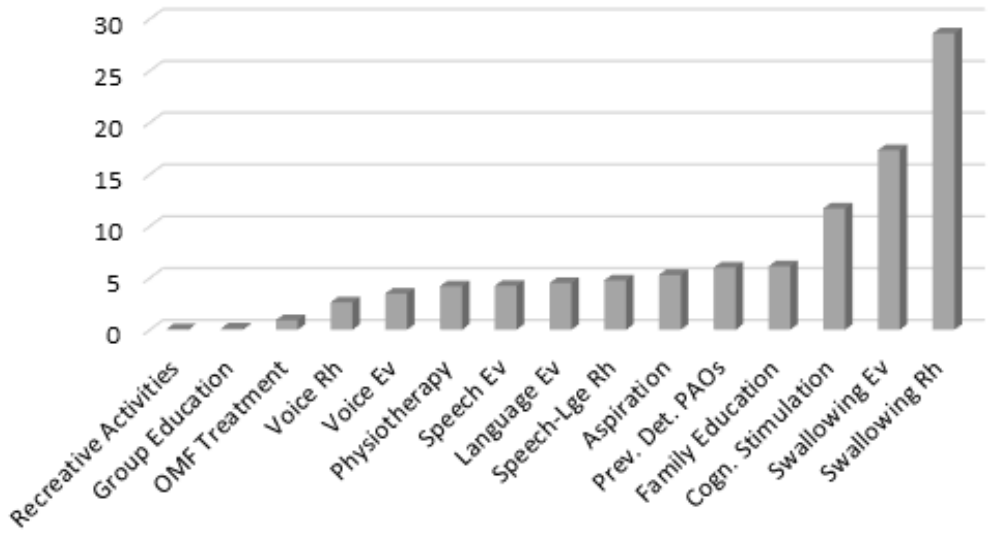
The diagnoses of the patients were coded according to the monthly statistical data (MSD) used in the Chilean Health Services (HS), noting a significant proportion of people who required speech therapy due to respiratory pathology (22.21%), disease cerebrovascular (34.25%) or other (37.12%) (Figure 2).



Captions: UTI = Urinary Tract Infection; Neurological SCI = Neurological Spinal Cord Injury; Neurological Tu= Neurological tumor; Neurological BT = Neurological Brain Trauma; Neurological CVD = Neurological Cerebrovascular Disease.

Figure 2. Ratio of diagnoses, according to monthly statistical registry of users attended in the Physical and Rehabilitation Medicine service

The analyzed cohort received 23,365 speech therapy services, with an average of 2.77 per session. Most of these actions corresponded to evaluation activities (17.3%) or swallowing rehabilitation (28.6%), followed by cognitive stimulation (11.7%). Non-specific actions such as recreational activities or group education have a considerably low occurrence (0.1%), noting that the tasks related to the disciplinary area of voice show a low occurrence (3.5% for evaluation and 2.6% for rehabilitation) (Figure 3).



Captions: Rec. Activities = Recreative Activities; OMF Treatment = Treatment of Oral Motor Functions; Rh = Rehabilitation; Ev = Evaluation; Lge = Language; Prev. Det. PAOs = Prevention of Deterioration of Phonoarticulatory Organs; Cogn. Stimulation = Cognitive Stimulation.

Figure 3. Ratio of speech therapy activities of the Physical and Rehabilitation Medicine service

In the case of cerebrovascular disease (CVD), it was noted that the RR of admission with this diagnosis in people aged 60 years and over is 1.36 (95% CI: 1.24-1.49; p = 0.001), compared to subjects of another age range. The RR of requiring rehabilitation due to CVD in people belonging to section B of the FONASA is 1.37 (95% CI: 1.29-1.46; p = 0.001), compared to subjects from other sections (A, B, D, without anticipation) and for diagnoses coded as other diseases, a RR of 1.24 (95% CI: 1.17-1.32; p = 0.001) was observed.

When analyzing the usability of rehabilitation services by month and type of REM diagnosis, a seasonal trend was observed, so diagnoses were stratified into trimesters. In this sense, it was noted that the RR to consult for respiratory disease was 0.55 (95% CI: 0.49-0.61; p = 0.001) from April to June and 1.63 (95% CI: 1.50-1.76; p = 0.001) in the winter period (July-September quarter). In the case of CVD and other pathologies, the RR of its occurrence tends to decrease in the months of July to September with a RR of 0.76 (95% CI: 0.71-0.82; p = 0.001) and RR = 0.88 (95% CI: 0.83-0.94; p = 0.001), respectively.

DISCUSSION

Age and socioeconomic status represents widely described risk factors for the development of various health problems that can impact the well-being of the population, morbidity, and mortality[25].

This research shows that people over 60 years of age (Figure 2) and low-income (Figure 3) concentrate the work of speech therapy in the context of the P&RM service, which is consistent with what is observed in other countries with elderly populations[26]. Likewise, a concentration of hospitalized patients aged 80 years or older was noted, which is expected in a public service specialized in musculoskeletal and neurological conditions that compromise functionality and quality of life, disorders whose incidence is higher in older people.

Given that the analyzed population comes from various hospital services, it is essential to mention that speech therapy work in the P&RM service represents a second line of care, after patients have, for example, overcome a critical state of health, have graduated from intermediate care or come from a medical-surgical unit with conditions that cannot be resolved through outpatient consultations.

There is a coincidence with previous studies regarding the speech therapy actions related to the approach to swallowing and/or cognition of the hospitalized person even though they are services of different complexity[23], dominating the swallowing evaluation and rehabilitation actions in the first instance what It is consistent with the casuistry of cerebrovascular disease and other pathologies of neurological origin reported in the cohort. The low report of evaluation activities and/or rehabilitation of language and speech (14% in total) in the P&RM service is explained that these actions are usually downloaded in the polyclinic, attached specialty office, and/or less complex care services in the outpatient setting.

Regarding the low occurrence of speech therapy actions related to voice, it is essential to note that in general, these activities are carried out as individual benefits aimed at non-hospitalized patients following international literature[27,28] and that problems related to invasive orotracheal intubation injuries they are usually handled in UPC[29,30].

Progressively, the evidence regarding speech therapy in the field of cognitive stimulation[31] has been strengthened, even though there is still controversy regarding disciplinary overlap with occupational therapy, psychology, and/or kinesiology[32,33]. The above offers development perspectives where the transdisciplinary can be an opportunity.

The estimation of relative risks made it possible to identify factors related to patients with sequelae of CVD who receive speech therapy. This must be interpreted in the context of the health device studied since the public system and the National Health Fund (FONASA) cover the population with the lowest income in Chile[34]. Regarding the seasonality observed in the requirement for speech therapy in the cohort, the literature indicates that there are environmental determinants that may influence the behavior of patients seeking medical or rehabilitation services[35,36] due to respiratory exacerbations, heart attacks, or cerebrovascular disease, among others[37-39]. However, there is no evidence related to the association between these factors and the provision of care by speech therapists, which is considered a precedent for future research.

A limitation of this study is the local nature. Even though an extensive database was available, there is heterogeneity in the territorial, environmental, cultural, and economic characteristics of the adult population, so this background must be interpreted in the context of the informed cohort. On the other hand, it is known that retrospective studies have the disadvantage of estimating incidences with little precision.

As a perspective, it is proposed to carry out multicenter studies and the analyzes which do not only describe profiles, but which can also evaluate cost-effectiveness, risk factors, and causality related to the determinants that influence the disorders that compromise human communication and swallowing in patients who require specialized care in physical medicine and rehabilitation services.

CONCLUSION

The profile of patients assisted in the P&RM service corresponds to the adult population, mainly over 60 years of age, diagnosed with respiratory, neurological, or other diseases that belong to a low socioeconomic level. Among the relevant risk factors regarding the need to require speech therapy are: age, socioeconomic level, and MSD diagnosis.

Although a seasonal behavior was observed in the provision of speech therapy services, it is essential to identify periods where patients' flow increases, to assess whether the professional staff can provide adequate coverage to patients or whether it is necessary to strengthen the staff of professionals to safeguard quality.

Even when speech therapy work is described in terms of rehabilitation in Chile, little evidence is available regarding the patients' profile, access to comprehensive rehabilitation, its effectiveness, user satisfaction, and continuity of support, among other issues, aspects that the profession must address systematically.

The generation of epidemiological profiles will contribute to the scope of a provision of services that can be adjusted to the characteristics of the patients and that allow improving the management of prioritization of resources and the generation of clinical guidelines based on evidence. This will also allow for a structural improvement in how speech pathologists are integrated into multidisciplinary teams at the hospital level, helping to improve the quality of life and functionality of the patients they accompany.

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