

The Effect of Volunteer Work in Hospitals: In a Brazilian University Hospital¹

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Resumo

Na gestão das instituições de saúde, em especial das estruturas hospitalares, a hipótese de que o trabalho voluntário proporciona mais eficiência na assistência hospitalar é um pensamento comum ao longo da prática cotidiana dessas instituições. No entanto, faltam evidências quantitativas de apoio a esse argumento. Este artigo tem como objetivo identificar o efeito do trabalho voluntário na qualidade do atendimento, mais especificamente, o efeito na satisfação do usuário, na taxa média de permanência e na taxa de infecções hospitalares, em uma Instituição Hospitalar Universitária do Sul do Brasil. Trata-se de um estudo quantitativo baseado em relatórios gerenciais internos, cujas análises foram realizadas por meio de regressões múltiplas, testes de normalidade de resíduos e testes de multicolinearidade. Os resultados apontam para dois indicadores claros da eficácia do trabalho voluntário: Taxa Média de Permanência e Taxa Média de Infecção Hospitalar. Ambos demonstram que, além de promover a humanização da assistência, o trabalho voluntário contribui para a qualidade da assistência à saúde no Sistema Único de Saúde (SUS).

Palayras-chave

Voluntariado. Gestão Hospitalar. Atuação. Sem Fins lucrativos.

Abstract

In the management of health institutions, especially hospital structures, the hypothesis that voluntary work provides more efficiency in hospital care is a common thought throughout the day-to-day practices of these institutions. However, there is a lack of quantitative evidence supporting such argument. This article aims to identify the effect of volunteer work on the quality of care, more specifically, the effect on user satisfaction, average stay rate and the rate of hospital infections, within a University Hospital Institution in Southern Brazil. This is a quantitative study based on internal managerial reports, whose analyses were conducted through multiple regressions, normality tests of residuals and multicollinearity tests. The results point to two clear

indicators of the effectiveness of volunteer work: Average Stay Rate and the Average Hospital Infection Rate. Both demonstrate that in addition to promoting the humanization of care, volunteer work contributes to the quality of health care within the Sistema Único de Saúde - SUS (Unified Health System).

Keywords

Volunteering. Hospital Management. Performance. Nonprofit.

INTRODUCTION

Volunteering can be seen as an expression of human kindness. This statement can only be made through empiricism, without the need for a specific citation from a specific study. Although the statement seems courageous, the experiential nature of this work allows such audacious statements to be made, since this is a socially constructed idea. This is especially relevant in a peculiar organizational environment, in which the borderline between health and disease is tenuous.

In Brazil, volunteer work within a hospital environment began around 1543, when the first "Santa Casa de Misericórdia" in Santos-SP was created by the first Portuguese groups (RODRIGUES *et al.*, 2014). From that moment on, several researchers have qualitatively shown that there is a perception that volunteers can have a tangible impact within the strategy of these organizations, where their undertaken actions explicitly show significant improvement to the efficiency of the hospital regarding the services offered, especially for the SUS providers.

Within this area of research, Ferreira, Proença e Proença (2015) state that a volunteer program that is aligned with an institution's strategies can contribute to the strengthening of the internal culture and effectiveness of processes and protocols (FARMER; FEDOR, 2001).

Such contribution can become exponentially valuable as long as it is presented as a service for the Brazilian public system, which promotes strategies, processes and actions based on increasing access and quality of health services, whose purpose is to safeguard citizens' lives (FERREIRA *et al.*, 2015). Such system has as a central agent, hospital structures that serve as the principal establishments in complex healthcare, aimed at seeking medical solutions for individuals and the communities which they belong to.

In corroboration to a study done by Hotchkiss *et al.* (2009), the current study strives to prove, quantitatively, the impact of volunteering on hospital environment, as seen through increased satisfaction of patients, diminishing average stay rates and diminishing average hospital infection rates. In order to do so, this study uses statistical procedures applied to both University Hospitals within greater Curitiba, which are providers of the Unified Health System. The purpose of this study is to prove a new perspective: that human goodness

materialized into volunteer work applied to a complex institution can increase the access and quality of hospital institutions.

Therefore, based on this general objective, the present study is justified, under the aspect of social management, by its empirical relevance, in subsidizing, through the practice of science, a better condition of access and health care in the Brazilian context, especially to users of the Unified Health System.

THEORETICAL APPROACH: VOLUNTEERING & ASSISTANCE PERFORMACE

Volunteer work can be defined as unpaid labor from individuals that desire to improve the well-being of a community (WU *et al.*, 2019). Some studies affirm that volunteer work is present in all societies and cultures and is related to caring the underserved: the sick, the disabled, the elderly, widows and orphaned children (KOHAN, 1965).

In addition to history, there is a worldwide increase in individuals participating in volunteer work, which can be justified by a collective yearning to improve life conditions on the planet. This increase has been noticeable for more than a decade. In 2006, a certain number of authors already published evidence affirming the growth of businesses, organizations and people involved in volunteer work (STUDER; VON SCHNURBEIN, 2013).

For Wu *et al.* (2019), volunteer work is considered a strategic and operational tool within the creation and expansion of social capital. This view is also affirmed in studies conducted by Rodrigues *et al.* (2014) and Ferreira *et al.* (2015). The effectiveness of volunteer work lies at the root of social capital expansion.

This work, besides having behavioral values, is linked to several technical characteristics. In this sense, Hudson (1999) emphasizes the importance of three aspects of volunteer work for society:

- Representation: a volunteer action should not be considered as a provider of social services through the State, rather, within a democratic state, it is perceived as an aspect of the representative process, of social integration and of the promotion of public policy;
- b. Innovation: volunteers have proven to be an important source of innovation when they are directly involved with the problem and, due to that, solutions are created;
- c. Citizenship: in a subjective nature, volunteers work to find solutions for diverse problems and aspire to better everyday life.

More specifically, other researchers have discussed the effects of volunteer work in hospital institutions, such as Ferreira *et al.* (2002), Rajah *et al.* (2016), Zappa and Zavarrone (2010), Rodrigues *et al.* (2014), Cnaan and Cascio (1998). Meyer, Pascucci and Murphy (2013) emphasize the forms of contribution and highlight the following advantages: patient improvement, image benefits to the hospital and cost reduction.

Dart (2004) highlight the strategic and tactical importance of volunteer work on hospital structure, specifically within the operational component of support work, fundraising, brand imaging, awareness campaigns focused on patient safety, information and process flows, as well as aspects related to the improvement of the organizational climate amongst employees, patients and family members.

In this sense, Rodrigues, Meyer and Cruz (2014, p. 155) state:

[...] volunteers, when well-managed, can contribute significantly to the fulfillment of various activities as well as to organizational performance, with emphasis on the humanizing element itself, in hospital organizations. In this context, volunteers, as collaborators, can contribute to the promotion of the quality and agility of the services provided with clear benefits to the users of these services, creating a climate conducive to good reception, good ambience and good treatment. Volunteers can potentially contribute not only to improving health services, but also to minimizing operational expenses and strengthening the organizational image by acting as propagators of good services provided to society.

According to Meyer, Pascucci and Murphy (2013), within hospital activities, volunteers can be a source of sociopsychological assistance to patients and their family members; they contribute to the creation of strategy independence of formal structures, contribute to the process of clinical treatment, when well accompanied. They may also be involved in other activities, such as public assistance, helping with patient displacement, answering phones, reading books to patients, single visits, conversing with patient family members, among other activities that vary according to the needs and demands of the particular management team of the hospital (WELLA *et al.*, 2004).

Some studies present evidence of the effect of volunteer work beyond personal assistance of individuals focused on the improvement of humanizing indicators, based on the improvement of hospital assistance, especially within the Brazilian Unified Health System (VASCONCELOS *et al.*, 2017). This has seen to increase hospital stay times, satisfaction, hospital infection rates, among other (RODRIGUES; MEYER; CRUZ, 2014). However, the majority of these studies are based on qualitative measures which reinforce the value of this current study. This study incorporates quantitative analysis to prove the hypothesis that volunteer work assists with the improvement of the quality of health service assistance (ANHEIER; SALAMON, 1999).

Within this context, the dissertation of these theoretical elements about understanding performance within health services becomes essential to comprehend the empirical relationship proposed. This is especially relevant to understand the Sistema Único de Saúde (SUS), whose practical purpose is challenging both in terms of access as well as the status of the service given (ZDZIARSKI, 2019).

Based on the challenge of fostering access and quality of health services, the Ministry of Health, through the Administrative Rule 312 of May 2,2002, established the Standardization of Nomenclature in the Hospital Center. The Ministry of Health defined hospital indicators

with the objective that they may be used in diverse sectors of the hospital. They are: quality of the patient's day, average length of stay and hospital infection rate. Besides these indicators, the Ministry of Health (2012) highlights the importance of a patient satisfaction indicator, as this is one of the few indicators that allow the evaluation of the provided services from the patient's and his/her family members' perspectives (CRUZ *et al.*, 2010).

Finally, through the understanding of the theoretical framework about this research proposal, one can evidence several scientific experiences whose purpose is to confirm the hypothesis that volunteer work positively affects the human element in hospital institutions, whose purpose is to safeguard human life. This fact is supported by the work by Hotchkiss *et al.* (2009). Such evidence strengthens the theoretical aspect of the first hypothesis provided: volunteer work positively impacts performance within healthcare, it is proven through scientific method, and it can be described in the following item.

METHODOLOGICAL PROCEDURES

This study has a descriptive and quantitative character that uses data from the University Hospital database. The analyzed data correspond to the average stay and average hospital infection indicators (dependent variables) and the amount of volunteer activities (independent variable) from January 2015 to October 2018, with monthly account, throughout 46 periods, as described in Table 1.

Table 1 - Descriptive Analysis Variables

Туре	Periods	Data	Description
DV	46	Average Stay Rate	It corresponds to the average period patients stay in the hospital structure.
DV	46	Hospital Infection Rate	It corresponds to the number of infections acquired by the patient while in hospital.
IV	46	Attendance	Displacement of the patient by means of a wheel-chair, stretcher or walking to the place indicated by the nurses.
IV	46	Internment Pickup	Reception of the patient who has just been admitted for a surgical procedure.
IV	46	Telephone Service	Receiving calls.
IV	46	Service Desk	Providing guidance to people who need to get to the examination sites or are lost in the hospital.
IV	46	Storytellers	Changing visitation time to a playful moment with story-reading or listening to patients' stories.
IV	46	Solitary Visits	Providing active listening to the patient in hospital bed.
IV	46	Solitary Angels	Visiting patients who are in palliative care.
IV	46	Musical Moments	Musical activities with patients and relatives.

IV	46	Vigilantes of Joy	Playful moments of joy and relaxation with the patients.
IV	46	Caring for who cares	Activities focused on the collaborator, such as: Reiki, motivational speech, stretching and postural exercises.
IV	46	Pet Care	Dog visits to patients and collaborators.
IV	46	Beauty Doctors	Beauty and aesthetic practices focused on patients, employees and family members.
IV	46	Recreational Mo- ments	Recreational activities and interactions between patients, relatives and collaborators.
IV	46	Volunteer Choir	Musical activities with patients and relatives.

Source: Research Data, 2019.

These data were analyzed with the help of SPSS software, by applying multiple regressions, with analysis of normality tests of residuals and multicollinearity Kolmogorov-Smirnov and Shapiro-Wilk.

The definition of the independent variables was based on a research by Rodrigues *et al.* (2014). The definition of dependent variables was based on the indicators described by the Ministry of Health. Both are cites in the Theoretical Approach component of this article.

DATA PRESENTATION AND ANALYSIS

Providing context to the primary objective of the study is an important element of the presentation and analysis of data. The study was conducted in the Cajuru University Hospital, located in Curitiba, the capital of the state of Paraná, in southern Brazil. It was founded in 1958, currently with 2016 beds, and it serves approximately 160 thousand patients through its clinical, surgical and diagnosis services per year. The hospital is accredited by the Unified Health System (SUS) as a service provider, with 100% community-based care and the mission of excellence in providing services to the community and continuing community development through teaching and research.

With 17 years of volunteer work, the institution currently has 220 volunteers, conducting 14 types of activities (Table 1). The institution has a qualified process of admission and training of volunteers, working effectively with the procedural dynamics of the institution.

Such controls serve as a database of independent variables for the study. Before the analysis, three independent variables were identified: Inpatient capture, storytellers and solitary visits. The variables were distinguished with an "F" indicator if they were above 4.17, and a "T" indicator for a value above 1.96. Others were discarded for analytical purposes since they were not relevant in observing a causal relationship and desired effects (LEVINE *et al.*, 2005). The following are specific analyses of the dependent variables: Average stay rate and hospital infection rate.

AVERAGE STAY RATE

The correlation between Stay Rate, as a dependent variable, and Volunteer Activities analyzed has a significant value of 0.208 (R-Squared), with an F index of 5.671, which, according to the bibliography, rejects the Null Hypothesis, affirming that there is a relationship between these variables and it shows the apparent effect of volunteer work on the variance of Stay Rates within the hospital.

The evidence of the correlation between these variables, although noticeable, does not allow for the confirmation that an increase in volunteer work decreases Hospital Stay Rate. Thus, a complementary analysis of the "T" index was performed, in this sense, "Internment Pickup" has a greater relevance of causality (-2.317), followed by the "Solitary Visits" activity (-0.742) and "Storytellers" (-0.502), that is among the variables, the "Internment Pickup" is statistically significant in the reduction of Hospital Stay Rate.

Although the other variables also contribute to the decrease of the Stay Rate, their significance is considered to be of little relevance, according to the parameters described in the statistical bibliography, since, according to Levine (2005), when the "z" score obtained exceeds 1.96 (a "z" higher than 1.96 or lower than -1.96), the result is considered statistically significant, revealing a greater causal relationship, in this case, the more "Internment Pickup", the lower the Stay Rate of patients within the hospital.

The statistical data of the multiple linear regression between the variables can be better observed in Table 2.

Table 2 - Non-standard coefficients of Multiple Linear Regression between Average Stay Rate and Volunteer Work

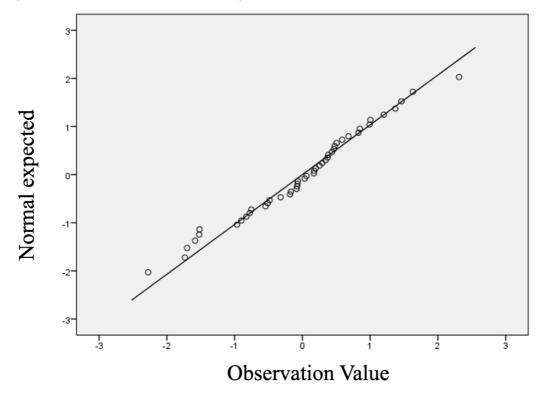
Indonendont	DV – Average Stay Rate					
Independent Variables	R2	F	Т	VIF	Kolmogorov-S- mirnov - Sig	Shapiro-Wilk - Sig
Internment Pickup		5,671	-2,317	2,229	0,200	0,742
Storytellers	0,208		-0,742	2,177		
Solitary Visits			-0,502	2,205		

Source: Research Data, 2019

In a complementary way, this study affirms that there is no multicollinearity among the variables, this assertion is based on the VIF index, whose values are presented in the metric indicated by the bibliography that shows evidence on the validity of the regression (Internment Pickup: 2.229; Storytellers: 2.177; Solitary Visits: 2.205). According to Levine *et al.* (2005), when the VIF is greater than 10, it means that there is too much correlation of the explanatory variables with each other, this will not provide new information, making it difficult to separate the effect of these variables on the dependent variable or the variable response, and therefore, collinearity was not representative in the variables analyzed in this study.

Analysis of the residuals shows that the data are normal (Kolmogorov-Smirnov: 0.200; Shapiro-Wilk: 0.742), since they present indexes above the predicted minimum (0.05) in the statistical literature, validating the normality assumption of the regression residuals, as shown in Figure 1 below.





Source: Research Data, 2019

Therefore, when establishing the Stay Rate as a dependent variable, it can be affirmed that there is a relevant effect of voluntary activities to its decrease, in particular, the activity called "Internment Pickup", which relates to the "bed-turning", makes it possible for more people to be attended with the same resources, as well as it decreases the exposure of patients to the risks inherent to staying in a hospital environment.

Such results corroborate the theoretical evidence cited by Ferreira *et al.* (2015) and Hotchkiss *et al.* (2009) in their latest research, affirming the positive influence of volunteer work on hospital stay rate.

HOSPITAL INFECTION RATE

Regarding the Hospital Infection Rate indicator, there is a significant correlation with the independent variables. The regression analysis calculates a significance of 0.561 (R-squared), with a factor of 17.899 in ANOVA. This rejects the Null Hypothesis, in other words, the more the volunteer work there is, the smaller the Hospital Infection Rate.

The analysis of the "T" index showed that the voluntary work of "Solitary Visits" has a greater relevance of causality (-3.637), followed by "Internment Pickup" (-1.125) and "Storytellers" (-0.637), this means that, among the independent variables, the "Solitary Visits" is statistically significant (above 1.96) in decreasing Hospital Infection Rate.

The multicollinearity test showed that the indirect variables analyzed were not collinear, since they presented FIV (Inflation Factor of Variance) less than 10, in this case, Internment Pickup 2.229, Solitary Visits 2.177 and Storytellers 2.205 make all the regressions valid.

The statistical data of the correction among the variables can be better observed in Table 3 below.

Table 3 - Non-standard coefficients of Multiple Linear Regression between Hospital Infection and Volunteer Work.

Indonondont	DV – Hospital Infection and Volunteer Work					
Independent Variables	R2	F	Т	VIF	Kolmogorov-S- mirnov - Sig	Shapiro-Wilk - Sig
Internment Pickup		17,899	-1,125	2,222	0,199	0,547
Storytellers	0,561		-3,637	2,180		
Solitary Visits			-0,637	2,204		

Source: Research Data, 2019

The analysis of the residuals show that the data are normal (Kolmogorov-Smirnov: 0.199; Shapiro-Wilk: 0.547), as in the analysis of the Stay Rate, the Hospital Inflection Rate as a dependent variable, shows indices above the predicted minimum (0.5) in the statistical literature, validating the assumption of the normality of the regression residuals according to the Figure 2.

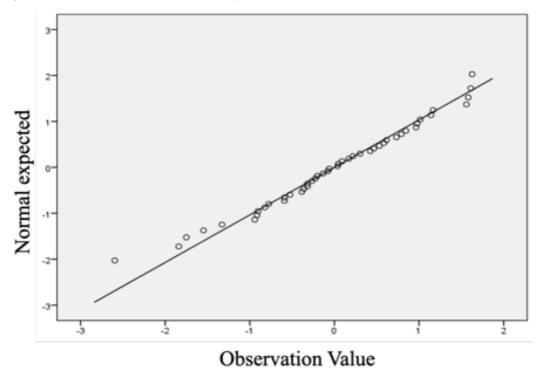


Figure 2 - Graph on the Normal Probability Plot of Residuals

Source: Research Data, 2019

Therefore, as well as in the analysis of the Stay Rate, the effect of volunteer work is noticeable regarding Hospital Infection Rate. One can affirm that there is a relationship between volunteer work and the prevention of infections in a patient's hospital stay. This ultimately reduces the cost of treatment and increases a patient's health care quality.

In this context, the evidence of the impact of voluntary work, as a contributory alternative to the improvement of health care conditions, by decreasing the permanence rate and the rate of nosocomial infection, corroborates with evidence from other research in the area, such as Ferreira *et al.* (2015), Rodrigues *et al.* (2014), Hotchkiss *et al.* (2009) and Farmer and Fedor (2001).

FINAL CONSIDERATIONS

From the results presented, it was possible to analyze the effect of volunteer work on hospital care, regarding the improvement of patient's life conditions, a decrease in the length of stay, and a reduction of hospital infection rate. These data reinforce the findings of Rodrigues, Meyer and Cruz (2014) and Meyer, Pascucci and Murphy (2013), which note the potential ability that volunteers have, when well-managed: contributing to the improvement of health services, reducing operational expenses, and strengthening the organization's image.

This relates to evidence reported by Hotchkiss *et al.* (2009), who quantitatively assert that there is a relationship between volunteer work and the reduction of organizational hospital expenses.

Although the focus of this research is not to show the economic effect of volunteer work, one can affirm that decreasing stay rates and hospital infection rates directly impacts the structural cost of the hospital, as well as the probability of generating new income. This can be a potential argument for not considering volunteers as solely adjuncts, but as integral and strategic components of hospital care (RODRIGUES; MEYER; CRUZ, 2014).

Ultimately, one can conclude that this study corroborates the need of incentivizing volunteer work in hospitals, as it can significantly reduce stay rates, hospital infection rates, and positively affect the quality of care within healthcare services. This confirms that the concept of "human goodness" and volunteering can become a manner to increase the access and quality of work of health care institutions.

In time, it is worth noting that the conceptual and empirical alignment of this research with research already carried out is evident, in the sense of positively affirming that voluntary work practices are worthy of attention in health management, contributing in an alternative way to qualification and access to health services, either by decreasing the patient's stay in hospital bed or by contributing to reducing hospital infection.

Finally, the present research is limited in its object and characteristics, as it assesses the context of the practice of voluntary work, solely and exclusively in beds linked to the Sistema Único de Saúde (SUS). These characteristics may show a bias in the research, as it fails to address the application of volunteering in supplementary health beds or other regions of the country, with different cultures, protocols and technologies.

NOTE

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