

## Original articles

# Well-being and associated factors among elementary school teachers in southern Brazil

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## ABSTRACT

**Purpose:** to verify the prevalence of well-being and its association with sociodemographic features, health and work-related conditions, and vocal behavior in elementary school teachers in the city of Pelotas, RS.

**Methods:** a cross-sectional observational study with 575 teachers from urban and rural areas. The participants answered a structured questionnaire that included items on sociodemographic, health and work-related conditions. The Faces Scale (Andrews) was used to evaluate their psychological well-being. The Vocal Behavior Profile verified occurrences of abuse and vocal misuse. Poisson regression was used for the multivariate analysis.

**Results:** of the total sample, 79.5% of teachers experienced well-being. It was observed that vocal behavior profile was significantly associated with well-being, and the number of students in the classroom showed a trend towards significance.

**Conclusion:** most teachers had a satisfactory well-being perception. Moreover, a lower well-being perception in the teaching population was mainly related to abusive vocal behavior and, less clearly, to the high number of students per classroom.

**Keywords:** Teachers; Personal Satisfaction; Voice

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## INTRODUCTION

Well-being can be understood as the degree to which individuals judge the overall quality of their lives as a whole favorably. It also consists in a positive evaluation of somebody's experiences in terms of affection and cognition<sup>1,2</sup>. Most of the health studies have the disease as the main outcome at different dimensions<sup>3</sup>. Despite positive health outcomes, such as the well-being construct that has been investigated in different populations<sup>4-6</sup>, there is still significant lack of theoretical consensus and measurement methods.

In this sense, the subjective evaluation of well-being can be influenced by several individual and social features. Among these, the physical and psychosocial work-related conditions have been highly associated with physical and mental health indicators in previous studies<sup>7,8</sup>.

Regarding the teacher population, the literature shows that adverse teaching conditions, such as high workload, double working hours, high number of students per classroom and noise, can significantly affect well-being rates and even the quality of life of these educators<sup>9,10</sup>. Another aspect that seems to be associated with a worse work ability in teachers is the presence of voice disorders, since voice is the teacher's work tool<sup>11,12</sup>.

However, it should be pointed out that the way in which the work-related conditions affect professionals varies from context to context, from person to person<sup>13</sup>. Thus, specific conditions of work organization and physical characteristics of the school setting may not be the most important predictors when evaluating subjective health problems in teachers, such as mental health disorders<sup>14</sup>.

While investigations on mental disorders in teachers have been presented in a clear and consistent way<sup>15</sup>, studies focusing on the positive aspects of health in this population are still scarce<sup>10,16</sup>. It is believed that addressing such aspects is relevant to recognize subjective measures as markers of health self-perception, and to provide data that subsidize preventive and protective actions of these professionals.

Therefore, it was hypothesized that greater well-being perceptions would be related to better physical health, including the use of the voice in teaching. In addition, more favorable organizational and demand conditions would also be associated with higher well-being rates. Therefore, the purpose of the present study was to verify the well-being prevalence and its association with sociodemographic features, health

and work-related conditions, and vocal behavior in elementary school teachers in the city of Pelotas, RS-Brazil.

## METHODS

This research was approved by the Research Ethics Committee of the Universidade Católica de Pelotas, under protocol number 2011/29. All teachers signed a written informed consent before answering the questionnaires. Those with signs of vocal impairment were referred to specialized care at the Centro de Referência em Saúde do Trabalhador.

A cross-sectional observational study was carried out at municipal schools in the urban and rural areas of the city of Pelotas. Considering the total population of 2,194 teachers from 103 municipal elementary schools and the objectives of the major research from which this study derived, the required sample number was 662, including 20% for control of confounding factors, losses and refusals. Thus, a stratified random sample selection was carried out and 556 teachers from 18 urban schools and 106 teachers from 13 rural schools were selected to participate in this study.

Sample capitation was performed in the selected schools. The inclusion criteria was accepting to participate in the study, and the exclusion criteria was to be physical education (PE) teachers, as their educational characteristics differ considerably from the classroom teachers. However, due the lack of information regarding the number of PE teachers and/or two different registrations in the municipal service registry, a total of 633 teachers were invited to participate; 58 were considered as refusals or losses or did not answer the evaluation tools, resulting in a final sample of 575 teachers.

Teachers answered a self-applied structured questionnaire, which contained questions on the following items: socio-demographic data (gender, age, socioeconomic status and education), health conditions (self-reported disease, tobacco use, and vocal rest) and work (sick leave due to voice, teaching time, workload, overtime, number of students per classroom and the school grades).

Well-being assessment was performed using the Andrews Faces Scale<sup>17</sup>. It is a visual scale composed of seven schematic faces whose expressions vary from extreme happiness to extreme sadness. Respondents pointed to the face that best represented the way they felt, most of the time, in the last month. Responses were then scored from 1 ("very happy") to 7 ("very

unhappy”). Therefore, the lower the score, the greater the degree of well-being perceived by the interviewee. As an outcome of this work, responses 1, 2 and 3 were considered as well-being<sup>3</sup>.

Socioeconomic status was measured using the classification proposed by the Brazilian Economic Indicator (*Indicador Econômico Nacional* - IEN) based on the 2000 Demographic Census<sup>18</sup>. The sample was divided into tertiles and placed into lower, middle or upper economic classes.

Teachers vocal behavior was verified by the Vocal Behavior Profile<sup>19</sup>, composed of 28 questions was developed to identify situations of abuse and vocal misuse as well as adverse conditions for vocal health. The score was determined as follows: 0 point indicates never, 1 point rare occurrence, 2 points low frequency, 3 points high occurrence and 4 points constant occurrence. Through the sum of the total score, the vocal profile was classified as “behaved/candidate for vocal problems” ( $\geq 30$  points), “serious risk” (from 31 to 50 points), and “champion of abuses” ( $\geq 51$  points).

The data were typed twice, with subsequent review to verify possible failures in filling, including automatic checks for consistency and amplitude by the Epi-Info™ 6.04. Data analysis was performed in the SPSS 22.0

software. Relative and absolute frequencies of the variables were described in the univariate analysis. Chi-square test was used in the bivariate analysis, aiming to describe associations between well-being and the independent variables. Finally, multivariate analysis was performed by Poisson regression<sup>20</sup>.

The study variables that obtained  $p \leq 0.20$  in the bivariate analysis were divided into two hierarchical models: the first level composed of demographic variables (socioeconomic status) and working conditions (school location, the school grades), number of students per classroom); in the second level, the variables of health conditions (self-reported disease and tobacco use) and vocal behavior (voice behavior profile and sick leave due to voice).<sup>21</sup> Significance levels were set at  $p < 0.05$ .

## RESULTS

In the present study, females were more prevalent (91.3%), with up to 40 years of age (50.3%) and from middle class (35%). Concerning education, 51.2% of the teachers had a postgraduate degree. For health-related conditions, 71.6% of teachers had some self-reported disease and 11.9% were smokers (Table 1).

**Table 1.** Association of well-being with characteristics and health conditions of elementary school teachers in Pelotas, RS, Brazil, 2011 (n = 575)

Variable	Total n (%)	Well-being n (%)	p-value*
<b>Gender</b>			0.930
Female	525 (91.3)	418 (79.6)	
Male	50 (8.7)	39 (78.0)	
<b>Age (years)**</b>			0.315
Up to 40	279 (50.3)	226 (81.0)	
41 or more	276 (49.7)	213 (77.2)	
<b>Economic status**</b>			0.129
Lower	173 (33.3)	132 (76.3)	
Middle	182 (35.0)	143 (78.6)	
Upper	165 (31.7)	137 (83.0)	
<b>Education**</b>			0.670
High school	43 (7.5)	34 (79.1)	
Graduate	237 (41.3)	186 (78.5)	
Post-graduate	294 (51.2)	236 (80.3)	
<b>Self-reported disease**</b>			0.009
No	155 (28.4)	135 (87.1)	
Yes	391 (71.6)	300 (76.7)	
<b>Tobacco use**</b>			0.020
Never	413 (73.5)	333 (80.6)	
Past	82 (14.6)	70 (85.4)	
Current	67 (11.9)	43 (64.2)	

\* Chi-square test; \*\* Variable with loss.

Regarding work-related conditions, most of teachers worked in urban schools (75.8%), had up to 10 years of teaching (47.2%), had a weekly workload of between 21 and 40 hours (62.7%) and did not work overtime (78.3%). The majority taught between 1<sup>st</sup> and 4<sup>th</sup> grades (66.7%) and had up to 25 students per classroom (75.9%). Concerning the vocal behavior profile, 49.2% of the sample was considered champion of vocal abuses, 67.6% reported no vocal rest, and 15% needed to take sick leave due to voice problems (Table 2).

The prevalence of well-being among teachers was 79.5%. They pointed at one of the three happier faces. In the bivariate analysis, the well-being perception was more prevalent in those who reported not having any disease ( $p=0.009$ ). In addition, for those who reported a current smoking habit, the well-being prevalence was significantly lower ( $p=0.020$ ) (Table 1).

For the association of well-being with work-related conditions, a higher prevalence was observed in teachers who had fewer students per classroom ( $p=0.012$ ). Regarding vocal behavior, those teachers classified as champions of vocal abuses presented worse well-being perception, compared to the other categories ( $p=0.005$ ). In addition, those who did not take sick leave due to voice problems had a higher prevalence of well-being ( $p=0.048$ ) (Table 2).

In the multivariate analysis, the only variable that remained significantly associated with well-being was the vocal behavior profile, with a 20% higher risk of poorer well-being perception compared to those behaved or candidates for vocal problems ( $p<0.001$ ). In addition, there was a trend towards an association with better well-being perception among teachers with fewer students per classroom ( $p=0.076$ ) (Table 3).

**Table 2.** Association of well-being with work conditions and vocal behavior of elementary school teachers in Pelotas, RS, Brazil, 2011 (n = 575)

Variable	Total n (%)	Well-being n (%)	p-value*
<b>School location</b>			0.150
Urban	436 (75.8)	353 (81.0)	
Rural	139 (24.2)	104 (74.8)	
<b>Teaching time (years)**</b>			0.677
Up to 10	269 (47.2)	214 (79.6)	
11 to 20	142 (24.9)	117 (82.4)	
21 or more	159 (27.9)	123 (77.4)	
<b>Working hours**</b>			0.235
Up to 20	124 (21.6)	101 (81.5)	
21 to 40	359 (62.7)	287 (79.9)	
41 or more	90 (15.7)	67 (74.4)	
<b>Overtime**</b>			0.880
No	445 (78.3)	356 (80.0)	
Yes	123 (21.7)	97 (78.9)	
<b>Teaches 1st to 4th grades**</b>			0.059
No	190 (33.3)	142 (74.7)	
Yes	381 (66.7)	312 (81.9)	
<b>Students per classroom**</b>			0.012
Up to 25	422 (75.9)	344 (81.5)	
26 or more	134 (24.1)	95 (70.9)	
<b>Vocal behavior profile**</b>			0.005
Behaved or candidate for vocal problems	52 (10.4)	44 (84.6)	
Serious risk for vocal problems	203 (40.4)	172 (84.7)	
Champion of vocal abuses	247 (49.2)	181 (73.3)	
<b>Does vocal rest**</b>			0.546
No	388 (67.6)	305 (78.6)	
Yes	186 (32.4)	151 (81.2)	
<b>Sick leave due to voice problems**</b>			0.048
No	488 (85.0)	395 (80.9)	
Yes	86 (15.0)	61 (70.9)	

\* Chi-square test; \*\* Variable with loss.

**Table 3.** Poisson regression indicating associated factors with well-being in elementary school teachers in Pelotas, 2011 (n = 575)

Variable	RR (CI95%)	p-value
<b>1<sup>st</sup> Level</b>		
<b>Economic status</b>		0.141
Lower	Reference	
Middle	1.03 (0.92 - 1.15)	
Upper	1.09 (0.98 - 1.23)	
<b>School location</b>		0.111
Urban	Reference	
Rural	0.90 (0.80 - 1.02)	
<b>Teaches 1st to 4th grades</b>		0.173
No	Reference	
Yes	1.07 (0.97 - 1.19)	
<b>Students per classroom</b>		0.076
Up to 25	Reference	
26 or more	0.90 (0.80 - 1.01)	
<b>2<sup>nd</sup> Level</b>		
<b>Self-reported disease</b>		0.127
No	Reference	
Yes	0.93 (0.84 - 1.02)	
<b>Tobacco use</b>		0.146
Never	Reference	
Past	1.05 (0.94 - 1.19)	
Current	0.84 (0.69 - 1.01)	
<b>Vocal behavior profile</b>		<0.001
Behaved or candidate for vocal problems	Reference	
Serious risk for vocal problems	0.95 (0.82 - 1.08)	
Champion of vocal abuses	0.80 (0.69 - 0.93)	
<b>Sick leave due to voice problems</b>		0.227
No	Reference	
Yes	0.90 (0.76 - 1.06)	

RR = relative risk; CI95% = confidence interval of 95%

## DISCUSSION

The present research found a high prevalence of well-being among elementary school teachers. It was also possible to verify that greater well-being perception was present among the teachers who presented a profile of vocal behavior characterized by better use of voice. In addition, a trend towards greater well-being was observed among teachers who taught in classes with fewer students.

The present cross-sectional study contains an important limitation that includes the impossibility of establishing a causal association between the exposures and the outcome, as well as indicating the direction of the observed association and the temporal sequence of events. The main strengths are the use of analogical-visual scales such as faces, that have

provided a more direct representation of feelings, when compared to the verbal translation necessary to answer a question on this subject<sup>17</sup>, and the large sample of elementary public school teachers who participated in this research.

The prevalence of well-being among elementary school teachers was 79.5%, indicating that they evaluated their own lives in a positive way. Investigations on the levels of well-being and possible associated factors in different populations are scarce in the international literature and almost nonexistent in Brazil<sup>4</sup>. Comparing the well-being prevalence of teachers interviewed (79.5%) to the adolescent population, using the same method of measurement, the proportion of well-being observed was higher in the group of youngsters (85.3 and 89.6%)<sup>5,22</sup>. Sociocultural characteristics related to the different age groups investigated may



explain the small difference, since a lower well-being perception was related to perceived age-related loss of the human development cycle<sup>23</sup>. In adolescence, performance scores related to quality of life are higher than in adult life<sup>24</sup>.

Conversely, Kidger et al.<sup>16</sup> found in their research in the United Kingdom low scores of well-being perception specifically among teachers. It is possible that such a difference, of higher well-being scores among the Brazilian population, is influenced by specific socio-cultural characteristics of the country, since the well-being perception varies according to regional and socioeconomic characteristics<sup>25</sup>. Although the Brazilian sample was exposed to unfavorable working-related conditions<sup>26</sup>, most teachers had a favorable perception, which can be explained by factors, such as being satisfied with their work, social support and good coping strategies, important aspects that guarantee the general well-being of people<sup>27</sup>.

Regarding the work-related conditions, the teachers with more than 25 students in the classroom had a lower proportion of well-being. Other studies have shown a similar association between well-being and the characteristics of the teaching work. The number of students per classroom was correlated to the burnout scores in the study of Carlotto and Palazzo (2006)<sup>28</sup>. In turn, Kidger et al.<sup>16</sup> observed that lower well-being was associated with working in schools with higher requirement for tasks and performance.

In a qualitative study conducted with university professors from Iraq, more interactive educational practices were implemented and the number of students per classroom was reduced<sup>29</sup>. This has resulted in positive reports of experience and performance by teachers, despite challenges related to poor infrastructure and lack of resources. These findings may justify the tendency toward the association between well-being with lower number of students per classroom. Also, it may be inferred that task overload and the lack of adequate teaching methodologies can impair the sense of self-efficacy and result in worse subjective assessments of well-being among teachers. In addition, although the p-value found is higher than 0.05, the interpretation of the result indicates that the difference in well-being prevalence observed is less than 8% more likely to be explained by chance.

Although other studies contemplate the relationship of vocal symptoms with the emotional scope of teachers

<sup>30</sup>, with the capacity to perform activities at work<sup>11,12</sup>, and with psychosocial and work organizational characteristics<sup>31</sup>, the present study is a pioneer in the field by presenting the association between vocal behavior profile and well-being in teachers. A higher proportion of well-being perception was observed among teachers who reported good vocal behaviors or presented lower risk of vocal problems. Usually, literature presents an association between emotional and vocal problems<sup>32,33</sup>, however, this new finding suggests that well-being may contribute to the use of more assertive coping strategies focused on occupational problems, such as better use of voice in the classroom<sup>34</sup>.

This suggestion should be interpreted with caution due the research design. However, in a longitudinal study, it was observed that the presence of mental disorders is a risk factor for incidence of vocal problems<sup>35</sup>. The presence of mental disorders is commonly associated with a lower proportion of wellbeing<sup>36</sup> and dysfunctional coping strategies<sup>37</sup>, and may contribute to poor voice use<sup>34</sup>. Emphasis is placed on the need to understand the factors that protect workers' health, so that preventive and protective strategies can be considered based on the individual abilities. We also emphasize the paucity of specific research on positive aspects of health, considering that this gap in the scientific literature lacks consensus and discussion.

## CONCLUSION

Based on the results obtained, we conclude that most elementary school teachers have a satisfactory sense of well-being. Moreover, the lower well-being perception in the teaching population is mainly related to abusive vocal behavior and, less clearly, to the high number of students per classroom.

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