

# Autoavaliação da saúde geral em professores da Educação Básica

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#### Resumo

O presente estudo teve como objetivo identificar o poder preditivo das variáveis sociodemográficas, laborais, qualidade de vida no trabalho e condições de trabalho no período pandêmico/ COVID-19 para a Autoavaliação da saúde geral em professores. Como instrumentos utilizou-se um questionário de dados sociodemográficos, laborais e questões relacionadas às condições de trabalho no período pandêmico/ COVID-19, a Escala de avaliação da Qualidade de vida no trabalho e um item único para a avaliação da Autoavaliação da saúde geral. A amostra foi constituída por 155 professores da Educação Básica. Os resultados revelaram um modelo explicativo para a Autoavaliação da saúde geral composto pelas variáveis maiores índices das dimensões da qualidade de vida no trabalho Possibilidades de lazer e convívio social e Integração, respeito e autonomia, tempo de trabalho, percepção de ter tido condições adequadas para dar aulas, não ser do grupo de risco para COVID-19 e menor tempo extra para preparação de aulas.

Palavras-chave: Condições de trabalho. Contexto pandêmico. Qualidade de vida no trabalho. Saúde.

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#### **Abstract**

The present study aimed to identify the predictive power of sociodemographic and work variables, quality of life at work and working conditions in the pandemic/COVID-19 period for self-assessment of general health in teachers. As instruments, we used a questionnaire on sociodemographic and labor data and issues related to working conditions during the pandemic/COVID-19 period, the Quality of Life at Work Assessment Scale and a single item for the assessment of self-assessment of general health. The sample consisted of 155 Basic Education teachers. The results revealed an explanatory model for Self-Assessment of general health composed of the variables highest indices of the dimensions of quality of life at work Possibilities for leisure and social life and Integration, respect and autonomy, working time, perception of having had adequate conditions to give classes, not being in the COVID-19 risk group and less extra time for class preparation.

Keywords: Health. Pandemic context. Quality of life at work. Work conditions.



# Autoevaluación de salud general en docentes de educación básica

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#### Resumen

El presente estudio tuvo como objetivo identificar el poder predictivo de variables sociodemográficas, laborales, calidad de vida en el trabajo y condiciones de trabajo en el período de pandemia/ COVID-19 para la autoevaluación de la salud general en docentes. Como instrumentos, se utilizó un cuestionario sobre datos sociodemográficos, laborales y cuestiones relacionadas con las condiciones de trabajo durante el período de pandemia/ COVID-19, la Escala de Evaluación de la Calidad de Vida en el Trabajo y un ítem único para la evaluación de la autoevaluación de la salud general. La muestra estuvo compuesta por 155 docentes de Educación Básica. Los resultados revelaron un modelo explicativo de Autoevaluación de la salud general compuesto por las variables de mayores índices de las dimensiones de calidad de vida en el trabajo Posibilidades de ocio y vida social e Integración, respeto y autonomía, tiempo de trabajo, percepción de haber tenido condiciones adecuadas para dar clases, no estar en el grupo de riesgo COVID-19 y menos tiempo extra para la preparación de clases.

Palabras clave: Calidad de vida en el trabajo. Condiciones de trabajo. Contexto pandémico. Salud.



# Introduction

The novel coronavirus (initially temporarily named 2019-nCoV and, on February 11, 2020, officially named SARS-CoV-2) is responsible for causing the disease COVID-19. On March 11, 2020, the World Health Organization (WHO) characterized COVID-19 as a pandemic, a term that refers to the geographic distribution of a disease rather than its severity. This designation acknowledged that, at the time, there were outbreaks of COVID-19 in multiple countries and regions around the world (PAN AMERICAN HEALTH ORGANIZATION [PAHO], 2021). The coronavirus spread rapidly across the globe, affecting various segments of society, including the educational system (CIPRIANI et al., 2021). The COVID-19 pandemic impacted educational systems worldwide, leading to the widespread closure of educational institutions at all levels. In April 2020, approximately 1.716 billion students were affected by the closure of these institutions in response to the pandemic (RUBIN, 2020). According to the author, monitoring by UNESCO revealed that 188 countries closed their national educational activities, and 5 implemented local closures, affecting around 99.4% of the global student population.

In Brazil, the school calendar was set to be executed for the 2020 academic year. Planning was done, routines established, meetings scheduled between students and teachers—everything seemed organized for the start of classes (SILVA et al., 2022). However, abruptly, yet understandably in a global crisis situation, classes were interrupted. Teachers did not return to schools to retrieve the materials they had already prepared for the start of the 2020 academic year. On March 17, 2020, the Ministry of Education and Culture (MEC) in Brazil regulated the possibility of replacing in-person classes with digital classes for the duration of the COVID-19 pandemic (MONTEIRO, 2020).

The new educational norms during the pandemic had an impact on the school community, families, students, and teachers, with Basic Education being one of the most affected since it involves the teaching-learning process for ages 4 to 17 (PREVITALI; FAGIANI, 2021). Teachers, who had frequently experienced adverse situations in the school routine, faced the unprecedented challenge of reinventing their profession amid the tension of a pandemic crisis (MONTEIRO, 2020). This tension was exacerbated by the national epidemiological and political context, as the control of the COVID-19 epidemic occurred amid political disputes. Although the country had early established general guidelines for addressing the issue, it has been subject to conflicting narratives, with denial or minimization of its severity by central authorities. The implementation of control and prevention measures was often deficient (LIMA et al., 2022).



Professional life was profoundly affected, leading to the need to adapt to new tools and ways of performing their roles, requiring more time and effort (BAADE et al., 2020). In response to the new scenario, technological efforts were employed to facilitate the emergency transition from inperson to online learning. These measures led to repercussions, one of which was the economic disparities faced by a segment of the population from lower socioeconomic backgrounds who lacked access to new ICTs. Another issue related to the operational difficulties teachers faced with the technologies (COLPAS et al., 2020).

The greatest difficulties faced by teachers in continuing the teaching process amid the social isolation imposed by COVID-19 were technological competencies, skills for developing digital teaching aids, and mastery of the methodologies required for using technological resources (CAMAYD; FREIRE, 2021). Remote teaching was a domain where primary education teachers had little expertise, finding themselves unexpectedly compelled to rethink their work processes for a virtual environment and video conferencing platforms, which had previously been limited to higher education (SOUZA et al., 2021). Thus, teachers needed to adapt to a distance learning context (BRITTO; WALTENBERG, 2021).

Research conducted by Souza et al. (2022) identified that teachers during the pandemic experienced accelerated and pressured sequences of activities, including excessive use of digital technologies for lesson planning, video recording, submission and correction of assignments, and relational difficulties. All of this fell under the sole responsibility of the teachers. The new organization of work time in a virtual environment was exacerbated by remote work, with rigid schedules for synchronous classes, meetings with coordinators, virtual meetings with colleagues, responses to emails and WhatsApp messages at various times, and always being available to coordinators, students, or their families, even beyond contracted working hours. This period was marked by an intensification of the workday, with no distinction between contracted working time and unpaid overtime.

A study by Hascher et al. (2021) highlights factors related to lower professional well-being, including high workload, social distancing, and feelings of incompetence and lack of self-efficacy. Well-being maintenance was associated with contextual work aspects such as school resources, support from colleagues and management, and clear work structures, along with individual aspects like resilience and coping strategies.

In addition to logistical difficulties in teaching, there was a significant impact on teachers' mental health (KIM et al., 2022; LEAL; PAULA JUNIOR, 2022; SANTOS et al., preprints) and





lower self-rated health (OLIVEIRA, 2021). Workers are exposed to physical, chemical, biological, mechanical, psychosocial, and ergonomic factors that can affect their health and, consequently, their self-assessment of health (LUA et al., 2018). Among distance education teachers, an increased perception of stressors such as workload, work organization, and pressure due to responsibility reduces self-rated health (GOEBEL; CARLOTTO, 2019).

Self-assessment is an important predictor of health status and has been used as a tool for measuring the health of individuals and population groups, especially due to its relative ease of application (BARBOSA et al., 2021). It is one of the most traditional indicators for assessing the health conditions of a population by capturing observable aspects such as the presence of illness or perceptions. This perception can be influenced by various social determinants and occupational factors, such as age, education, income, and work stressors (OLIVEIRA, 2021). It is a subjective indicator that encompasses physical, emotional components of individuals, as well as aspects of well-being and satisfaction with one's life (PAVÃO et al., 2013).

Occupational stressors have a different effect depending on the current state of self-rated health; transitions over time have been related to a deterioration in self-rated health (OLIVEIRA, 2021). Stress related to COVID-19 was associated with lower self-rated health (ZHENG et al., 2021). Better overall self-rated health during the pandemic was associated with younger individuals living with a partner (POORTINGA et al., 2021) and poorer health in people with lower education levels (OHLBRECHT; JELLEN, 2021) and with mental health issues (DAI et al., 2020). Research by Amotz et al. (2022) revealed that female teachers with more remote teaching experience and higher resilience had higher levels of subjective health perception.

Research conducted by Morais (2021), involving 6,510 Basic Education teachers across 5,737 schools throughout Brazil, identified a prevalence of poor self-rated health in 27% of the sample. The likelihood of worse self-rated health was significantly higher for teachers with 10 to 20 years of service, those who worked under job pressure, experienced verbal violence and indiscipline, and had a commute to school of more than 50 minutes. The likelihood of worse self-rated health was significantly lower for those who reported engaging in other paid activities, had sufficient time to complete their tasks, had social support, and were more satisfied with their work.

Another study by Barbosa et al. (2021), with a random sample of 700 Basic Education teachers, aimed to investigate the prevalence and factors associated with negative self-rated health. The results revealed issues such as overcrowded classes, job dissatisfaction, physical inactivity, obesity, reports of chronic diseases, and one or more vocal complaints.



Le and Nguyen (2020) researched 350,000 respondents in 51 states in the US during the COVID-19 pandemic and found worse general self-rated health among individuals in confinement compared to those who did not adopt such measures. A study by Santos et al. (2020) with primary school teachers identified that dissatisfaction with health was related to occupational aspects such as lack of time to perform work tasks, as well as individual factors like lack of physical activity/sports, poor sleep quality, common mental disorders, musculoskeletal symptoms, and voice disorders. Poor working conditions expose workers to risks that impact their health and quality of life at work (CLAUDINO et al., 2021). Additionally, quality of life at work is one of the most important factors for retaining teachers in their jobs (JAVADI et al., 2019).

Quality of Work Life (QWL) models focus on evaluating the elements of the work context that are fundamental to the constitution of QWL and that affect the health and well-being of workers. Rueda et al. (2013) developed a theoretical model based on a rating scale composed of four factors:

1. Integration, respect, and autonomy, described as promoting respect for individual differences and workers' rights, cooperation and respect among colleagues, autonomy, and opportunities to utilize and develop workers' skills, fair compensation, and responsibilities aligned with the role performed.

2. Fair and adequate compensation, characterized by satisfaction with salary and organizational salary policies and the perception that the salary is fair for the physical and/or mental effort expended.

3. Opportunities for leisure and social interaction, defined by the balance between work and overall life space, adequate working hours to allow for family, social, and leisure interactions.

4. Incentives and support, indicating the opportunity for continuous growth, job security and working conditions, the opportunity to use and develop skills, and the support and encouragement provided by the organization to its employees, reflecting on their quality of life.

It is agreed that the COVID-19 pandemic affected physical and mental health (LEVKOVICH; SHINAN-ALTMANB, 2021; QIU et al., 2020). According to the authors, the better an individual's self-rated health, the lower the perceived threat and the greater the positive emotions. Knowledge about COVID-19, perceived susceptibility, general self-rated health, and emotional reactions have an important influence on individuals' ability to cope with health threats (LEVKOVICH; SHINAN-ALTMANB, 2021).

Therefore, this study aimed to identify the predictive power of sociodemographic variables, work-related factors, quality of work life, and working conditions during the pandemic/COVID-19 on general self-rated health among teachers.





#### Method

# **Participants**

The non-probabilistic sample consisted of 155 Basic Education teachers who had been working for at least 6 months at their current school and who had not been on sick leave in the year prior to data collection. The participants had a mean age of 37.75 years (SD = 8.84; Min = 24, Max = 58 years). Most participants identified as female (85.8%; n = 133), were in a relationship (78.1%; n = 121), had children (55.5%; n = 86), had postgraduate education (80.6%; n = 125), and resided in the state of Rio Grande do Sul (RS) (85.2%; n = 132).

Regarding occupational characteristics, the average length of time working at the current school was 6.62 years (SD = 6.88; Min = 1, Max = 35 years). In terms of the educational levels taught for most of their working hours, the largest proportion taught in Elementary Education (50.3%; n = 78), followed by Early Childhood Education (26.5%; n = 41) and Secondary Education (23.2%; n = 36). Participants reported an average contractual work load of 32.48 hours per week (SD = 10.22; Min = 5, Max = 50). Of the participants, 66.5% (n = 103) indicated working at only one school and only in the public sector, 66.0% (n = 93). Regarding remuneration, 50.9% (n = 79) received between 1 and 3 minimum wages, 40.0% (n = 62) received between 3 and 5 minimum wages, and 9.0% (n = 14) received 5 minimum wages or more. Concerning the COVID-19 pandemic context, most reported working in a hybrid format (70.3%; n = 109)).

### Instruments

Data were collected using the following instruments: 1) Sociodemographic Questionnaire: age; marital status; number of children; and education; 2) Occupational Data Questionnaire: length of professional experience; primary educational level taught; contractual weekly working hours; actual weekly working hours; approximate number of students attended daily; length of time at the current school; whether working in a public or private educational network; whether working at another school; whether engaged in another paid activity unrelated to education; monthly income; current teaching format (online, in-person, hybrid); 3) General Health Self-Assessment, evaluated by the question: "How do you perceive your overall health?", with responses ranging from 1 (poor) to 10 (excellent); 4) Workplace Quality of Life Scale: developed by Rueda et al. (2013), this instrument consists of 35 items distributed across four factors: 1) Integration, Respect, and Autonomy (15 items;  $\alpha = 0.89$ , e.g., "Freedom of expression is respected"); 2) Fair and Adequate Compensation (6 items;  $\alpha = 0.89$ , e.g., "My salary is fair for the effort (physical or mental) I put in"); 3) Opportunities for



Leisure and Social Interaction (6 items;  $\alpha = 0.84$ , e.g., "My work allows me to have leisure time with my family"); 4) Incentives and Support (8 items;  $\alpha = 0.76$ , e.g., "The company provides periodic training"). Responses are recorded using a five-point Likert scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree).

#### **Data Collection Procedures**

Data collection was conducted via an electronic form (SurveyMonkey) between April and September 2021. Participants were recruited through social media platforms such as Facebook, LinkedIn, and email contacts of the researchers using the snowball sampling technique (DUSEK et al., 2015). In this method, participants invited other colleagues who met the study's requirements to assist with completing the instrument.

Access to the survey was granted only after participants read and accepted the Informed Consent Form (ICF). The study was approved by the Research Ethics Committee of the University of Vale do Rio dos Sinos under the number CAAE: 43856621.9.0000.5344.

# **Data Analysis Procedures**

he database was analyzed using SPSS 20 (Statistical Package for the Social Sciences). Initially, exploratory descriptive analyses were performed to assess the distribution of items and the quality of the database. Subsequently, descriptive statistics (frequency, mean, standard deviation) were calculated.

Multiple Linear Regression Analysis (stepwise method) was conducted with self-rated health as the dependent variable. Independent variables included sociodemographic factors (age, gender, marital status, having children, education) and work-related factors (professional experience, time in the current school, working in another school, engaging in other paid work unrelated to education, monthly income), quality of work life (Integration, Respect and Autonomy; Fair and Adequate Compensation; Opportunities for Leisure and Social Interaction; Incentive and Support), and working conditions during the pandemic (adequate conditions for teaching during the pandemic, receipt of personal protective equipment for teaching during the COVID-19 pandemic, perception that work demands increased with the COVID-19 pandemic).

Statistical assumptions for multiple linear regression were tested, and no violations were detected according to Field (2009). There was no multicollinearity among the study variables, with all values below 0.673. The Variance Inflation Factor (VIF) was below 4 (1.024), and the Tolerance



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value was below 1 (0.977). The Durbin-Watson coefficient was close to 2, varying from 2.04, indicating independence of distribution and no correlation of residuals. Cook's distance was below 1 (0.007), suggesting no atypical predictors and a good model fit. Predictor variables were selected with a significance level of p<0.05. In the regression analysis, the effect size was obtained using standardized regression coefficients calculated in the final model, according to Marôco (2007).

#### **Results**

The single-item variables collected revealed that for self-rated health, the average was 7.07~(SD=1.62) on a scale from 1 to 10. Regarding having adequate conditions to teach during the COVID-19 pandemic, the average was 2.44~(SD=0.92) on a scale from 1 to 5, and for receiving personal protective equipment for teaching during the pandemic, the average was 2.25~(SD=1.01) on a scale from 1 to 4. Concerning the perception that work demand increased with the COVID-19 pandemic, the average was 5.48~(SD=0.66) on a scale from 1 to 6. For the dimensions of Quality of Work Life: Integration, Respect, and Autonomy (M=4.00; SD=0.79); Fair and Adequate Compensation (M=2.40; SD=1.20); Opportunities for Leisure and Social Interaction (M=3.33; SD=1.00); Incentive and Support (M=2.74; SD=0.84).

Table 1 presents the explanatory model for self-rated health. The results revealed a model consisting of six variables that explained 39% of the variance in the dependent variable. QWL/Opportunities for Leisure and Social Interaction and QWL/Integration, Respect, and Autonomy, receiving adequate conditions for teaching, years of professional experience, and not being in a risk group showed a positive association with self-rated health, while the number of overtime hours for lesson preparation was negatively associated with self-rated health.



Table 1 - Linear regression model for self-rated general health (n = 155)

Variables	R <sup>2</sup>	R² Adj	В	в	t
QVT. Possibilities for leisure and social	0,25	0,25	0,41	0,25	2,61*
interaction					
Being in the risk group/ Covid	0,29	0,28	-0,78	-0,19	-2,85**
Suitable conditions for teaching	0,32	0,31	0,30	0,17	2,41*
Overtime for class preparation	0,35	0,33	-0,05	-0,20	-2,96**
QVT. Integration, respect and autonomy	0,37	0,35	0,41	0,20	2,11*
Time of professional activity	0,39	0,36	0,03	0,13	1,10*

Covid risk group: no = 0; yes =1.

p < 0.05, p < 0.01

Source: prepared by the authors

The results reveal a high effect size ( $R^2 = 0.39$ ), according to the parameters recommended by Marôco (2007). Thus, the obtained value indicates that the relationships found are likely also present in the target population of Basic Education teachers.

## **Discussion**

The present study aimed to identify the predictive power of sociodemographic variables, work conditions, quality of life at work, and work conditions during the pandemic/COVID-19 for self-rated general health among teachers. The variables included in the model were Quality of Life at Work/Social Leisure and Interaction Opportunities, not being in a high-risk group for COVID-19, adequate conditions for teaching, overtime for lesson preparation, Quality of Life at Work/Integration, Respect, and Autonomy, and years of professional experience.

Regarding the variable Social Leisure and Interaction Opportunities, a dimension of quality of life at work, it can be considered that teachers who perceived their workload as adequate during the pandemic and who maintained their personal space for family interaction and leisure activities likely had a better overall self-assessment of their health. This result confirms a study by Park et al. (2021), which identified occupational balance as an important variable associated with self-rated general health, quality of life, and leisure satisfaction.





Although there is evidence that the coronavirus can infect people of all ages, the high-risk groups identified by the World Health Organization (2019) were the elderly and individuals with pre-existing medical conditions. Not belonging to a high-risk group for COVID-19 increased the perception of general health. It can be assumed that, despite the difficulties experienced by participants, some teachers managed to develop healthy habits, engage in exercise, and take care of their nutrition and emotional health (Silva & Leite, 2021; Tala et al., 2020), and also stayed updated with health information, despite the spread of misinformation that weakened public adherence to necessary preventive measures during the epidemic (Galhardi et al., 2020). The higher the subjective health state of an individual, the lower the perceived threat and the greater the positive feelings (LEVKOVICH; SHINAN-ALTMANB, 2021).

The variable of receiving adequate conditions for teaching was associated with a better perception of general health. It is possible that teachers who received institutional support to carry out their work experienced greater job satisfaction (Yuh & Choi, 2017). Teachers who received resources, clear work guidelines, and support from administration exhibited higher well-being (Hascher, 2021). Another possibility is that teachers who managed their activities during the pandemic, viewing the situation as a challenge, were able to create new teaching strategies using technology and interact with students (Honorato & Marcelino, 2020). Teachers who believed that learning new teaching methods would be useful in the future showed higher motivation (Toto & Limone, 2021). Motivated and satisfied teachers tend to have better health indicators (Fernández-Puig et al., 2015; Morais, 2021). A study by Conceição et al. (2022) revealed that after the initial tension, teachers adapted, albeit cautiously, to the new reality and found some advantages in using the tools, such as the ability to quickly communicate with students and increased accessibility for lessons. Most teachers (85%) intend to use these tools and platforms when in-person teaching resumes.

According to Barreto and Rocha (2020), a significant number of teachers, despite not being prepared, embraced the challenge of new pedagogical practices, creating videos and online activities, devising strategies for students without access to technology, and engaging with the real demands of combating the virus and preserving lives. They also saw the pandemic as an opportunity to connect better with students and help them cope with this difficult time.

However, teachers who had to work overtime for lesson preparation reported worse health evaluations. Teachers worked more than usual during the pandemic (Gicheva, 2022), which had a significant impact on their physical and emotional health and quality of life (Lizana & Vega-Fernandez, 2021). A study by Lizana and Vega-Fernandez (2021) found that teachers with low mental



health scores considered their family and personal lives to be most affected during the pandemic due to increased work hours.

The result regarding the Quality of Life at Work dimension of Integration, Respect, and Autonomy indicates that a higher sense of individual respect, employee rights, promoted autonomy, clear norms, capacity development, fair remuneration, and aligned responsibilities (Rueda et al., 2013) is associated with a higher self-assessment of general health. A study by Baker et al. (2021) found that teachers who experienced personal freedom during the pandemic and felt that their institution recognized their personal needs experienced fewer stressors and better mental health.

A greater length of professional experience was associated with a better self-assessment of health. This result can be analyzed from the perspective that greater professional experience helps teachers better handle occupational stressors. Lizana and Vega-Fernandez (2021) found greater deterioration in mental health among younger teachers, suggesting that they might have less capacity to manage stress under unfavorable conditions compared to older professionals.

## Conclusion

The results revealed an explanatory model for self-assessment of general health consisting of dimensions of quality of work life (greater leisure and social interaction opportunities and integration, respect, and autonomy), work-related variables (better conditions for teaching, greater professional experience, more overtime for lesson preparation), and health-related factors (not being in the COVID-19 risk group).

The study presents some limitations that should be considered when interpreting its results. The first limitation is its cross-sectional design, which prevents the analysis of causal relationships between the investigated variables. The second limitation is the regional focus of most of the sample, which is from the state of Rio Grande do Sul (RS), which may have characteristics different from other states and regions of the country. This is an important issue, as during the pandemic, responsibilities were assigned to governors and mayors, leading to variations in school guidelines on how to handle the pandemic.

The investigation suggests some possibilities for future studies. It is recommended to include variables related to the content of teaching duties and psychosocial stressors, job satisfaction, and leadership styles to expand the predictive power of self-assessment in general health. It is also recommended to expand studies with randomly collected samples from different states in Brazil to





examine the cultural and socioeconomic influences of educational institutions on general health selfassessment.

Regarding practical implications, in terms of prevention, it is crucial to monitor teachers' self-assessment of health during and after the pandemic, especially concerning overtime work. The redesign of work should be considered collaboratively between administration, technical staff, and teachers. Post-pandemic, there should be a significant effort from the school community to restore overall health, particularly emotional health.

Providing a better balance between work and private life is important as it directly or indirectly affects subjective health, quality of life, and health-related variables. Improving subjective health and quality of life can be achieved by promoting better occupational balance (Park et al., 2021). The post-pandemic world should build new structures that enhance coordination and collaboration among teachers, considering their experiences to lead to better working and health conditions (Audrain et al., 2022), which extends to the entire school community.

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