Burnout of Nurses in Nursing Homes: To What Extent Age, Education, Length of Service and Length of Work Experience at the Current Workplace Affect the Level of Professional Burnout

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ABSTRACT

We are witnessing very demanding and stressful times in which we live, and an occupation that is particularly exposed to stress and different working conditions is the job of a nurse. Exposing themselves to everyday challenges and stressful situations, nurses reach a stage of great emotional and physical exhaustion, lethargy, dissatisfaction, and poorer work achievements, which we know as burnout. The aim of this paper was to determine whether there is and to what extent professional burnout is present in nurses and technicians working in nursing homes across Slovenia and Croatia. The paper is answering the questions of the extent of the burnout influenced by individual characteristics (age, education, years of service and work experience at the current workplace). The study involved a validated questionnaire “The Oldenburg Burnout Inventory (OLBI)” to measure professional burnout. Surveying of the nurses was conducted online at their home institutions. The results show that all respondents have a medium or high level of professional burnout, while no one has a low level or shows no signs of burnout. In terms of age, the group from 55-65 years of age had the highest relative level of burnout in the age group category. With regard to education, the highest burnout was measured in registered nurses.

1. Introduction

In his scientific work, Freudenberger 1974, refers to the term “burn-out” which is defined in the dictionary as the verb “burn”, “fail”, “take out” or become exhausted due to the demand for large amounts of energy, strength, or resources. Based on this definition, he founded the term "burnout", which defines a person in the workplace who "burns" for various reasons, thus becoming inoperative in everything he or she intends to do [1].

Burnout is a long-term response to chronic, emotional, and interpersonal stressors at work, and is defined by three dimensions: exhaustion, cynicism, and inefficiency. The way people relate to their work and the difficulties that can arise when disagreements arise have long been recognized as a significant phenomenon of the modern age. The use of the term “combustion” for this phenomenon began to appear regularly in the 1970s in the United States of America, especially among people working in services that involve working with people [2]. As a reliably recognizable stress syndrome at work, the experience of individuals with stress and burnout is placed in the broader organizational context of people’s attitudes toward their work. Combustion disrupts both personal and social functioning. The decline in the quality of work in physical and psychological health can cost dearly not only the employee but also others who collaborate with him/her or are in any way related to his/her work [3],[4].

Burnout is defined as a syndrome that can occur in individuals who “work with people” and is characterized by depleted emotional resources, the development of cynicism, dissociation, and decreased perception of working abilities. In burnout, exhaustion precedes cynicism, which precedes inefficiency while workload has a direct correlation to exhaustion itself [5],[6]. Nurses are considered professionals who care and empathize, so individuals, families, and entire communities want nurses to support, heal, and encourage during physical, emotional, and spiritual distress [7]. They do their jobs to the best of their abilities in highly stressful and complex working conditions with people who are seriously ill. Lack of support and resources, patient demands, lack of autonomy and...
complexity of work further contribute to the potentially unfavorable environment and the emergence of burnout [8], therefore, in their study, Jiang et al. 2016 offered proposals for programs to alleviate stress and provide assistance to nurses by providing opportunities for training and education of nurses, increasing staffing, improving nurse autonomy, and empowering older nurses who should not work in shifts [9],[10].

2. Objectives of the Study

The objective of the research is to investigate whether there is and to what extent burnout is present in nurses and caregivers working in nursing homes. The research includes nurses and caregivers of different age groups who have different levels of education and aims to determine how much these variables affect burnout. In addition, the impact of the length of service on the current job they perform in a nursing home and its impact on the occurrence of burnout will be examined.

3. Literature Review

Workplace stress seriously affects the quality of nurses’ work as well as their mental functioning [11]. The importance of working hours and the connection with the occurrence of occupational burnout in homes has been described by Haller et al. 2020; Han et al. 2015; White et al. 2019 [12]-[14].

A study by Lesly et al. 2015, concluded that millennial nurses (aged 21-33) are more prone to burnout or show less compassion than their “Baby Boomer” counterparts (aged 50-65) or ”Generation X” (aged 34-49) [15]. Empathy, support, and education organized by the institution act as protective predictors, while passive coping and neuroticism are phenomena that increase the risk of “burnout and fatigue of compassion” in nurses in the workplace [16].

A study conducted by Rudman and Gustavsson 2011, showed that during the first three years of working life, almost every fifth medical student experiences a high level of burnout at some point [17], while Ohue et al. 2011, concluded that unmarried nurses have a higher tendency to burnout than married nurses [18]. The less tired and saturated health workers are, they are more emotionally engaged, their physical sense of well-being is better, and they are more aware of potential safety hazards given the needs of their patients and families [19].

The analysis of Woodhead et al. 2014 [20], showed that increased job demands as well as feelings of stress due to conscience about the work described by From 2013; Juthberg et al. 2010 create greater professional stress and people experience more emotional exhaustion, more depersonalization and less personal achievement. Support from supervisors, friends, family members, and ensuring satisfactory working conditions is associated with less emotional exhaustion and higher levels of personal achievement [21],[22].

Globally, the root causes of the shortage of nurses include an aging workforce, inadequate financial incentives [23], long working hours and heavy workloads [24]. The concept of burnout is particularly important due to both professional and financial losses related to lost working days and the loss of nurses in the profession. The importance of burnout, but also one's own well-being, must be made aware of and thoroughly understood by nurses themselves, as well as by management in health and social care institutions, and in case of loss, recognized and intervened in time [7].
4. Methods and Results

4.1. Methods

A quantitative method was selected for conducting research of professional burnout of caregivers and nurses of all education levels conducted in nursing homes across the Republic of Slovenia and Croatia. The total number of respondents was (N = 436). Of these, there were women (N = 401), men (N = 30) and five respondents who refused to declare gender. Looking at the workplace, the questionnaire was completed by caregivers (N = 105), nurses with secondary education (N = 176), nurses with a bachelor's degree also referred to as registered nurses (N = 108), nurses with master's degree (N = 17), while 30 questionnaires were completed by “other” occupations such as physiotherapists, social workers, and employees who take care of the users in the home. A three-part questionnaire was used in the research. The first part of the questionnaire consisted of demographic questions followed by questions about job satisfaction and working conditions, while a validated questionnaire – The Oldenburg Burnout Inventory (OLBI) [25] – was used to determine burnout, which measures the two basic dimensions of combustion – exhaustion and alienation. In their work and research, Demerouti and Bakker 2008, define exhaustion as the result of intense affective, cognitive, and physical stress, while alienation as personal distancing from work [25]. The questionnaire was utilized in Google Forms, and the survey was conducted online. The Governments of the Republic of Slovenia and Croatia provided lists of all elderly homes in the Republic of Slovenia and Croatia, to which an e-mail was sent requesting the signing of the attached consent to conduct examinations of nurses of all education levels and caregivers, along with a link to the questionnaire. The directors of the institutions were asked to approve the research and to send a link via Viber, WhatsApp, Messenger, or e-mail to the employees of the institution or the nurse responsible for health care in the institution and requested them to complete the questionnaire. The questionnaire was completed on a voluntary basis, anonymously, and completing and sending it to the examiner served as an informed consent to participate in the research. The collected data were processed by the IBM-SPSS 25 statistical data processing program.

4.2. Results

4.2.1. Descriptive statistic of the total number of respondents who completed the questionnaire

Table 1. Descriptive statistics of results on the burnout questionnaire (N = 436)

| Parameter     | Statistics |
|---------------|------------|
| Mean          | 2.531      |
| Median        | 2.562      |
| Variance      | 0.068      |
| Std. deviation| 0.259      |
| Minimum       | 1.563      |
| Maximum       | 3.125      |
The analysis of the received data from the questionnaire on professional combustion resulted in the following:

arithmetic mean - M = 2.531; confidance interval 95% CI (2.51, 2.56); median = 2.562; standard deviation SD = 0.259; min = 1.563; max = 3.125.

**Table 2.** Values of testing the normality of the distribution of results on the questionnaire

| Parameter            | Kolmogorov-Smirnov | Shapiro-Wilk |
|----------------------|--------------------|--------------|
| statistic            | .092               | .981         |
| df                   | 436                | 436          |
| p                    | .000               | .000         |

Table 2 shows that the distribution of results on the burnout questionnaire is statistically significantly different from normal p = 0.000

**Table 3.** Frequency and percentage of respondents in certain clinical categories

| Parameter  | Frequency | Percent |
|------------|-----------|---------|
| Low        | 1         | .2      |
| Medium     | 297       | 68.1    |
| High       | 138       | 31.7    |
| Total      | 436       | 100.0   |

In the examined sample of clinical categories, only one has a low level of professional burnout, 297 (68.1%) have a medium level, while 138 (31.7%) respondents have a high level. Criteria were taken from the author Delgadillo et al. (2018) who in their work established the clinical levels of burnout.
4.2.2 The relationship between age groups of respondents and the expression of burnout

Table 4. Descriptive statistics of results on the burnout questionnaire by age groups

| Parameter       | Statistics - Age | 1. from 18 - 24 years | 2. from 25 - 33 years | 3. from 34 - 44 years | 4. from 45 - 54 years | 5. from 55 - 65 years |
|-----------------|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Mean            |                  | 2.488                 | 2.498                 | 2.557                 | 2.513                 | 2.596                 |
| Median          |                  | 2.500                 | 2.500                 | 2.562                 | 2.500                 | 2.625                 |
| Variance        |                  | .074                  | .061                  | .073                  | .068                  | .058                  |
| Std. deviation  |                  | .271                  | .247                  | .269                  | .260                  | .240                  |
| Minimum         |                  | 1.563                 | 1.938                 | 1.750                 | 1.813                 | 1.875                 |
| Maximum         |                  | 2.938                 | 3.063                 | 3.125                 | 3.125                 | 3.125                 |
| Range           |                  | 1.375                 | 1.125                 | 1.375                 | 1.313                 | 1.250                 |
| Skewness        |                  | -1.091                | -.125                 | -.674                 | -.099                 | -.527                 |
| Kurtosis        |                  | 2.231                 | -.087                 | .793                  | .249                  | .968                  |

Table 5. Values of testing the normality of the distribution of results on the burnout questionnaire by age groups

| Age | Kolmogorov-Smirnov | Shapiro-Wilk |
|-----|--------------------|--------------|
|     | Statistics        | df | p    | Statistics | df | p    |
| 1.  | .171               | 47 | .001 | .929       | 47 | .007 |
| 2.  | .086               | 93 | .089 | .982       | 93 | .239 |
| 3.  | .130               | 105| .000 | .964       | 105| .006 |
| 4.  | .080               | 122| .053 | .986       | 122| .255 |
| 5   | .126               | 69 | .008 | .963       | 69 | .037 |

In Table 5, the Kolmogorov-Smirnov test showed that the distributions of the results on the burnout questionnaire in the age groups from 18 to 24, 34 to 44, and 55 to 65 differed significantly from normal.

Table 6. Number and percentage of respondents in certain burnout clinical categories by age groups

| Age         | Crosstabulation- Burnout in clinical categories | low | medium | high | total |
|-------------|-----------------------------------------------|-----|--------|------|-------|
| (Group 1)   |                                               |     |        |      |       |
| from 18-24 years | Count                                     | 1   | 31     | 15   | 47    |
| % within age | 2.1%                                        |     | 66.0%  | 31.9%| 100.0%|
| % within burnout in clin.categ. | 100%                                       | 10.4% | 10.9% | 10.8% |
| Group | % total | % within age | % within burnout in clin.categ. | % total |
|-------|---------|--------------|---------------------------------|---------|
| (Group 2) from 25 -33 years | | | | |
| Count | 0 | 69 | 24 | 93 |
| % within age | 0.0% | 74.2% | 25.8% | 100.0% |
| % within burnout in clin.categ. | 0.0% | 23.2% | 17.4% | 21.3% |
| % total | 0.0% | 15.8% | 5.5% | 21.3% |
| (Group 3) from 34 -44 years | | | | |
| Count | 0 | 64 | 41 | 105 |
| % within age | 0.0% | 61.0% | 39.0% | 100.0% |
| % within burnout in clin.categ. | 0.0% | 21.5% | 29.7% | 24.1% |
| % total | 0.0% | 14.7% | 9.4% | 24.1% |
| (Group 4) from 45 -54 years | | | | |
| Count | 0 | 91 | 31 | 122 |
| % within age | 0.0% | 74.6% | 25.4% | 100.0% |
| % within burnout in clin.categ. | 0.0% | 30.6% | 22.5% | 28.0% |
| % total | 0.0% | 20.9% | 7.1% | 28.0% |
| (Group 5) from 55 -65 years | | | | |
| Count | 0 | 42 | 27 | 69 |
| % within age | 0.0% | 60.9% | 39.1% | 100.0% |
| % within burnout in clin.categ. | 0.0% | 14.1% | 19.6% | 15.8% |
| % total | 0.0% | 9.6% | 6.2% | 15.8% |
| Total | | | | |
| Count | 1 | 297 | 138 | 436 |
| % within age for the whole sample | 0.2% | 68.1% | 31.7% | 100.0% |
| % within burnout in clin.categ. | 100.0% | 100.0% | 100.0% | 100.0% |
| % total | 0.2% | 68.1% | 31.7% | 100.0% |
From Table 6 it can be concluded that the relatively highest level of burnout is within the clinical category “high” in the age Group 3, present in 29.7% of respondents. However, when observing clinical groups, the highest levels of burnout are in age Groups 3 and 5, both having the same percentage of 39% of respondents.

Table 7. Kruskal-Wallis test values when testing differences between groups according to the result on the burnout questionnaire

| Parameter | Kruskal-Wallis test |
|-----------|---------------------|
|           | N       | Mean Rank |
| Age       |         |           |
| from 18-24| 47      | 201.52    |
| from 25-33| 93      | 200.02    |
| from 34-44| 105     | 235.29    |
| from 45-54| 122     | 205.56    |
| from 55-65| 69      | 252.30    |
| Total     | 436     |           |

Table 7a. Kruskal-Wallis test values when testing differences between groups according to the result on the burnout questionnaire

| Parameter | Burnout |
|-----------|---------|
| Kruskal-Wallis H | 11.046 |
| df         | 4       |
| P          | .026    |

According to the Kruskal-Wallis test p <0.05 (p = 0.026) which indicates that there is a statistically significant difference in the results on the burnout questionnaire between different age groups.

In order to prove a statistically significant difference in burnout between age groups, a series of Mann-Whitney tests were conducted.

Table 8. Mann-Whitney test

| Parameter | Ranks |
|-----------|-------|
|           | N     | Mean Rank | Sum of ranks |
| Age       |       |           |              |
| from 18-24| 47    | 68.21     | 3206.00      |
| from 34-44| 105   | 80.21     | 8422.00      |
| Total     | 152   |           |              |
Table 8a. Mann-Whitney test

| Parameter          | Burnout |
|--------------------|---------|
| Mann-Whitney U     | 2078.000|
| Wilcoxon W         | 3206.000|
| z                  | -.159   |
| p                  | .119    |

Tables 8 and 8a show that there are no statistically significant differences in burnout levels between age groups 18-24 and 34-44 (p = 0.119) because p > 0.05.

Table 9. Mann-Whitney test

| Parameter | Ranks |
|-----------|-------|
| Age       | N     | Mean Rank | Sum of ranks |
| from 18-24| 47    | 84.07     | 3951.50      |
| from 45-54| 122   | 85.36     | 10413.50     |
| Total     | 169   |           |              |

Table 9a. Mann-Whitney test

| Parameter          | Burnout |
|--------------------|---------|
| Mann-Whitney U     | 2823.500|
| Wilcoxon W         | 3951.500|
| z                  | -.153   |
| p                  | .878    |

Tables 9 and 9a show that there are no statistically significant differences in burnout levels between age groups 18-24 and 45-54 (p = 0.878) because p > 0.05.

Table 10. Mann-Whitney test

| Parameter | Ranks |
|-----------|-------|
| Age       | N     | Mean Rank | Sum of ranks |
| from 25-33| 93    | 91.05     | 8468.00      |
| from 34-44| 105   | 106.98    | 11233.00     |
| Total     | 198   |           |              |
Table 10a. Mann-Whitney test

| Parameter  | Burnout |
|------------|---------|
| Mann-Whitney U | 4097.000 |
| Wilcoxon W   | 8468.000 |
| z           | -1.959  |
| p           | .050    |

Tables 10 and 10a show that the difference in the results on the burnout questionnaire is statistically significant (p = 0.05) p≤ 0.05 in the direction that the age group 34-44 achieves significantly higher results than the group aged 25-33.

Table 11. Mann-Whitney test

| Parameter | Ranks                           |
|-----------|---------------------------------|
| Age       | N  | Mean Rank | Sum of ranks |
| from 25-33| 93 | 73.20     | 6807.50      |
| from 55-65| 69 | 92.69     | 6395.50      |
| Total     | 162|           |              |

Table 11a. Mann-Whitney test

| Parameter  | Burnout |
|------------|---------|
| Mann-Whitney U | 2436.500 |
| Wilcoxon W   | 6807.500 |
| z           | -2.625  |
| p           | .009    |

Tables 11 and 11a show that the difference in the results on the burnout questionnaire is statistically significant (p = 0.009) p≤ 0.05 in the direction that the age group 55-65 achieves significantly higher results than the group aged 25-33.

Table 12. Mann-Whitney test

| Parameter | Ranks                           |
|-----------|---------------------------------|
| Age       | N  | Mean Rank | Sum of ranks |
| from 34-44| 105| 85.10     | 8936.00      |
| from 55-65| 69 | 91.14     | 6289.00      |
| Total     | 174|           |              |
Table 12a. Mann-Whitney test

| Parameter       | Burnout |
|-----------------|---------|
| Mann-Whitney U  | 3371.000|
| Wilcoxon W      | 8936.000|
| z               | -.777   |
| p               | .437    |

Tables 12 and 12a show that there are no statistically significant differences in burnout levels between age groups 34-44 and 55-65 because p > 0.05 (p = 0.437).

Table 13. Mann-Whitney test

| Parameter | Ranks          |
|-----------|----------------|
| Age       | N   | Mean Rank | Sum of ranks |
| from 45-54| 122 | 88.49     | 10796.00     |
| from 55-65| 69  | 109.28    | 7540.00      |
| Total     | 191 |           |              |

Table 13a. Mann-Whitney test

| Parameter       | Burnout |
|-----------------|---------|
| Mann-Whitney U  | 3293.000|
| Wilcoxon W      | 10796.00|
| z               | -2.505  |
| p               | .012    |

Tables 13 and 13a show that the difference in the results on the burnout questionnaire is statistically significant (p = 0.012) p≤ 0.05 in the direction that the age group 55-65 achieves significantly higher results than the group aged 45-54. Other combinations of pairs when testing differences in results show that they are not statistically significant.

4.2.3. The relationship between education of respondents and the expression of burnout

Table 14. Number of respondents in certain categories according to the level of education

| Burnout              | Ranks | Mean Rank |
|----------------------|-------|-----------|
| Education            | N     |           |
| Caregiver            | 105   | 216.99    |
| Nurse.secondary      | 176   | 212.47    |
Table 15. Values of the Kruskal-Wallis test for testing differences in the results of the burnout questionnaire between groups with different levels of education

| Parameter          | Education | Kruskal-Wallis H | df | p       |
|--------------------|-----------|-----------------|----|---------|
|                    |           | 2.816           | 4  | 0.589   |

Tables 15 shows that there are no statistically significant differences between groups with different levels of education because \( p > 0.05 \) (\( p = 0.589 \)).

Table 16. Number and percentage of respondents in certain clinical categories by education level

| Education                          | Crosstabulation- Burnout in clinical categories |
|------------------------------------|------------------------------------------------|
|                                    | low | medium | high | total |
| Caregiver                          | 0   | 75     | 30   | 105   |
| % within education                 | 0.0%| 71.4%  | 28.6%| 100.0%|
| % within burnout in clin.categ.    | 0.0%| 25.3%  | 21.7%| 24.1% |
| % total                            | 0.0%| 17.2%  | 6.9% | 24.1% |
| Nurse secondary education          | 0   | 123    | 53   | 176   |
| % within education                 | 0.0%| 69.9%  | 30.1%| 100.0%|
| % within burnout                    | 0.0%| 41.4%  | 38.4%| 40.4% |
| in clin.categ.         | % total | 0.0% | 28.2% | 12.2% | 40.4% |
|-----------------------|---------|------|-------|-------|-------|
| Registered nurse (Bachelor degree) | Count   | 0    | 67    | 41    | 108   |
|                       | % within education | 0.0% | 62.0% | 38.0% | 100.0% |
|                       | % within burnout in clin.categ. | 0.0% | 22.6% | 29.7% | 24.8% |
|                       | % total | 0.0% | 15.4% | 9.4%  | 24.8% |
| Master's degree       | Count   | 0    | 11    | 6     | 17    |
|                       | % within education | 0.0% | 64.7% | 35.3% | 100.0% |
|                       | % within burnout in clin.categ. | 0.0% | 3.7%  | 4.3%  | 3.9%  |
|                       | % total | 0.0% | 2.5%  | 1.4%  | 3.9%  |
| Other                 | Count   | 1    | 21    | 8     | 30    |
|                       | % within education | 3.3% | 70.0% | 26.7% | 100.0% |
|                       | % within burnout in clin.categ. | 100.0% | 7.1%  | 5.8%  | 6.9%  |
|                       | % total | 0.2% | 4.8%  | 1.8%  | 6.9%  |
| Total                 | Count   | 1    | 297   | 138   | 436   |
|                       | % within education for the whole sample | 0.2% | 68.1% | 31.7% | 100.0% |
|                       | % within burnout in clin.categ. | 100.0% | 100.0% | 100.0% | 100.0% |
|                       | % total | 0.2% | 68.1% | 31.7% | 100.0% |
| Education                      | Crosstabulation- Burnout in clinical categories |   |   |   |
|-------------------------------|-----------------------------------------------|---|---|---|
|                               | low  | medium | high | total |
| Caregiver                     |      |        |      |       |
| Count                         | 0    | 75     | 30   | 105   |
| % within education            | 0.0% | 71.4%  | 28.6%| 100.0%|
| % within burnout in clin.categ.| 0.0% | 25.3%  | 21.7%| 24.1% |
| % total                       | 0.0% | 17.2%  | 6.9% | 24.1% |
| Nurse secondary education     |      |        |      |       |
| Count                         | 0    | 123    | 53   | 176   |
| % within education            | 0.0% | 69.9%  | 30.1%| 100.0%|
| % within burnout in clin.categ.| 0.0% | 41.4%  | 38.4%| 40.4% |
| % total                       | 0.0% | 28.2%  | 12.2%| 40.4% |
| Registered nurse              |      |        |      |       |
| (Bachelor degree)             |      |        |      |       |
| Count                         | 0    | 67     | 41   | 108   |
| % within education            | 0.0% | 62.0%  | 38.0%| 100.0%|
| % within burnout in clin.categ.| 0.0% | 22.6%  | 29.7%| 24.8% |
| % total                       | 0.0% | 15.4%  | 9.4% | 24.8% |
| Master's degree               |      |        |      |       |
| Count                         | 0    | 11     | 6    | 17    |
| % within education            | 0.0% | 64.7%  | 35.3%| 100.0%|
| % within burnout in clin.categ.| 0.0% | 3.7%   | 4.3% | 3.9%  |
Table 16 shows the level of burnout in caregivers and nurses with respect to their education levels. It can be concluded that no caregiver or nurse has a low level of burnout, but they are all in the categories of relatively medium or high level. Furthermore, the relatively highest level of burnout within the clinical category “high” have nurses with secondary education – 38.4% of them. Observing the percentage of respondents according to education levels within their groups, registered nurses have the relatively highest level of burnout – 38% of them.

4.2.4. The relationship between respondents’ length of service and the expression of burnout

Table 17. Descriptive statistics of length of service on the burnout questionnaire (N = 436)

| Parameter                  | Statistics |
|----------------------------|------------|
| Length of service          |            |
| Mean                       | 17.818     |
| Median                     | 17.000     |
| Variance                   | 140.973    |
| Std. deviation             | 11.873     |
| Minimum                    | .25        |
| Maximum                    | 43.00      |
| Range                      | 42.75      |
| Skewness                   | .242       |
| Kurtosis                   | -1.176     |
Table 17 shows that the average length of service of nurses who completed the questionnaire is slightly greater than 17 years, while the lowest is 3 months (0.25 years) and the longest is 43 years.

**Table 18.** Values of testing the normality of the length of service distribution

| Parameter           | Length of service |
|---------------------|-------------------|
| **Kolmogorov-Smirnov** |                   |
| statistic           | .108              |
| df                  | 436               |
| p                   | .000              |
| **Shapiro-Wilk**    |                   |
| statistic           | .942              |
| df                  | 436               |
| p                   | .000              |

Table 18 shows that the distribution of respondents’ length of service is statistically significantly different from normal.

**Table 19.** Spearman's rho test values correlate between the length of service and results on the burnout questionnaire

| Parameter Lenght of service | Spearman's rho test |
|-----------------------------|---------------------|
|                            | Length of service   |
|                            | Burnout             |
| Length of service           | 1.000               |
| p                           | .091                |
| N                           | 436                 |
| N                           | 436                 |

Table 19 shows that the correlation is not statistically significant (p = 0.059), so there is no correlation between length of service and results on the burnout questionnaire.

4.2.5. The relationship between the length of work experience at the current workplace in the nursing home and burnout

**Table 20.** Descriptive statistics of the length of work experience at the current workplace on the burnout questionnaire (N = 436)

| Parameter Work experience | Statistics  |
|---------------------------|-------------|
| Mean                      | 9.981       |
| Median                    | 6.000       |
| Variance                  | 94.118      |
Table 20 shows that the average length of work experience in the current workplace is about 10 years. Meanwhile, the minimum is 3 months (0.25 years) and the maximum number of years that a respondent has worked in the same workplace is 40 years.

Table 21. Values of testing the normality of the length of work experience distribution at the current workplace

| Parameter              | Work experience at current workplace |
|------------------------|--------------------------------------|
| Kolmogorov-Smirnov     |                                      |
| statistic              | .180                                 |
| df                     | 436                                  |
| p                      | .000                                 |
| Shapiro-Wilk           |                                      |
| statistic              | .857                                 |
| df                     | 436                                  |
| p                      | .000                                 |

Table 21 shows that both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate that the distribution of length of work experience in the current workplace does not follow the normal distribution (p = 0.000)

Table 22. Spearman’s rho test values correlate between length of work experience at the current workplace and results on the burnout questionnaire

| Parameter                          | Spearman’s rho test |
|------------------------------------|---------------------|
| Work experience at current workplace | Burnout             |
| Work experience at current workplace | 1.000               |
| p                                   | .043                |
| N                                   |                     |
| N                                   | 436                 |
| N                                   | 436                 |

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Table 22 shows that the Sperman rho coefficient is not statistically significant (p = 0.369), thus we can conclude that there is no statistically significant correlation between the length of work experience in the workplace and the results on the burnout questionnaire.

5. Discussions

The aim of this research was to investigate the prevalence of burnout among caregivers and nurses of different education levels who work in nursing homes. The study involved 436 people who voluntarily completed the questionnaire. Based on the obtained results, conclusions can be drawn about the relationship and impact of age, education level, length of service and length of work experience in the current workplace with burnout among nurses and caregivers working in nursing homes across Slovenia and Croatia. Authors Delgadillo et al. 2018, in their paper set the burnout levels that are attached in the instructions on calculating burnout scoring in the standardized questionnaire the Oldenburg Burnout Inventory. It states there that the low burnout level is ≤1.62 (low); intermediate level 1.63 – 2.67 (medium); high level of burnout ≥2.68 (high). From this research it is evident that the average result obtained by the burnout questionnaire in the examined sample is 2.562, which tells us that in the sample most nurses and caregivers working in homes have a medium level of burnout [26]. This is supported by the examination of a sample of clinical categories, where only one person has a low level of professional burnout, 68.1% have a medium level, while 31.7% of respondents have a high level.

The highest relative level of burnout in the clinical category “high” had the group of 34-44 years with a share of 29.7%, while at the level of clinical groups with 39% share had groups of 34-44 and 55-65 years. Mann-Whitney test of comparing the oldest age group 55-65 years with other groups (25-33 and 45-54 years) suggests a possible conclusion that the older age group shows higher levels of burnout than the younger age groups. Comparing the age group 34-44 with 25-33, they also obtained statistically significantly higher results, while in other combinations there are no significant differences. In a study by Kelly et al. 2015, their findings suggest that nurses aged 21-33 years are more susceptible to burnout than their older counterparts aged 34-44 years [27]. The same conclusion was reached in the work of Lee et al. 2015, in which it was stated that younger nurses are more prone to higher levels of burnout [28], as the same results obtained by Rosha Nombre et al. 2020 [29]. In their studies Torre et al. 2019 and Asghar Mohammadpoorasl 2012 did not find a significant correlation between age and burnout level [30],[31]. Our research with cross-comparison of age groups showed that older nurses have the highest burnout level.

The respondents are divided into four groups based on their education levels: caregivers, nurses with secondary education, registered nurses and nurses with master's degree. The relatively highest level of burnout in the clinical category “high” was shown to have nurses with secondary education with a share of 38%, while at the level of clinical groups it was registered nurses who had the relative highest level of burnout, with a share of 38%. Relatively average levels of burnout in the clinical category “medium” had nurses with secondary education with a share of 41.4%, while at the level of clinical groups had caregivers with a share of 71%.

Relatively high burnout levels with a share of 35% is found in nurses with a master's degree, which the same conclusion was reached by Asghar Mohammadpoorasl 2012 [31]. In their research, Torre et al. 2019 did not find a significant correlation between education level and burnout [30], nor did Sara Mahmoudi et al. 2020 in theirs [32].
Analyzing the length of service, we wanted to see if this variable affects the occurrence of burnout in nurses and caregivers. In the sample analyzed, the average length of service was 17 years, while the lowest length of service had a person who worked for three months, and the longest length of service had a nurse who worked for 43 years in her lifetime. Spearman's correlation test, which did not show statistically significant values, was used to analyze the correlation between length of service and burnout. This study showed that no matter how long their career was, it was not correlated to the burnout level in nurses and caregivers. The same conclusions were reached by Torre et al. 2019, whereby they did not find a significant connection between length of service and burnout [30], as confirmed in a paper by Asghar Mohammadpoorasl 2012 [31]. However, Daniela Filipa Rocha Nobre et al. 2020 stated that people with longer careers have lower levels of burnout [29].

The same analysis was conducted for the variable length of work experience at the current workplace in a nursing home. Spearman's correlation test did not show statistically significant values and it can be concluded that regardless of whether nurses previously worked in another workplace or institution and now work in a nursing home, the data shows that the current length of work experience does not affect the emergence of burnout.

6. Conclusion

It is evident, but also worrying, that all respondents, i.e. all nurses and caregivers, have a medium or high level of burnout, while only one respondent out of 436 people showed a low level of burnout. In the study, not a single respondent showed the absence of symptoms that would indicate the absence of burnout. It can be concluded that older nurses are more susceptible to burnout than younger nurses. Furthermore, highly educated nurses are more susceptible to relatively high levels of burnout, presumably due to greater responsibility in the workplace.

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Declarations

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Competing Interests Statement

The author declares no competing financial, professional and personal interests.

Consent for publication

Author declares that he/she consented for the publication of this research work.

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