

# Identified Nursing Diagnoses and Nursing Interventions in Older Adults in Family and Community Nursing Care

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**KEYWORDS:** nursing care, nursing plan, home environment, needs assessment, older adults, community nurse

**ABSTRACT** – Developing a nursing care plan for older adults, using nursing diagnoses and planning nursing interventions based on these, contributes to the development of a continuum of patient-centred care. The study explores the incidence of nursing diagnoses and interventions in older adults in community nursing care and whether they differ according to living environment, education, and gender. A combination of quantitative and qualitative research approaches was used to analyse the archival data collected in the CoNSENSo project. A retrograde review of documents was carried out, with which we wanted to review a selection of nursing diagnoses and nursing interventions collected on a sample of 732 older adults. The classification according to the NANDA model was used to determine the agreed diagnoses. In the identification of nursing diagnoses, there are statistically significant differences between the incidence of nursing diagnoses according to the level of education, gender and living environment (urban/rural). The obtained data significantly contribute to and confirm the importance of using nursing diagnoses and nursing intervention planning for effective management of patient treatment in the home environment.

Izvirni znanstveni članek

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**KLJUČNE BESEDE:** zdravstvena nega, načrt zdravstvene nege, domače okolje, prepoznavanje potreb, starejši odrasli, patronažna medicinska sestra

**POVZETEK** – Oblikovanje načrta zdravstveno-negovalne obravnave starejših in ob tem uporaba negovalnih diagnoz ter na podlagi le-teh načrtovanje intervencij zdravstvene nege pripomore k oblikovanju kontinuirane v pacienta usmerjene zdravstvene nege. Študija raziskuje pojavnost negovalnih diagnoz in intervencij zdravstvene nege pri starejših odraslih v patronažnem zdravstvenem varstvu ter proučuje, ali se incidenca razlikuje glede na življenjsko okolje, izobrazbo in spol. Za analizo arhivskih podatkov, zbranih v okviru projekta CoNSENSo, je bila uporabljena kombinacija kvantitativnega in kvalitativnega pristopa k raziskovanju. Izveden je bil retrogradni pregled dokumentov, s katerim smo želeli pregledati izbor negovalnih diagnoz in intervencij zdravstvene nege, zbranih na vzorcu 732 starejših odraslih. Za identifikacijo negovalnih diagnoz je bila uporabljena klasifikacija po modelu NANDA. Pri prepoznavanju negovalne diagnoze obstajajo statistično pomembne razlike med pojavnostjo negovalnih diagnoz glede na stopnjo izobrazbe, spol in bivalno okolje (mesto/podeželje). Pridobljeni podatki potrjujejo pomembnost uporabe negovalnih diagnoz in načrtovanje intervencij zdravstvene nege za učinkovito vodenje obravnave pacienta v domačem okolju.

## 1 Background

In an era of longevity, the average age of individuals is steadily rising, leading to a rapid increase in the proportion of the population aged 65 and above (Corselli-Nordblad et al., 2020). In 2022, according to the Statistical Office of Slovenia, 21.4

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percent of the population was over the age of 65, and projections suggest that by 2050, one-third of the population will fall within this age group. The World Health Organization (2022) emphasizes the critical importance of public health care for older adults, advocating for the transformation of healthcare systems to provide long-term care and create conditions for a high quality of life for older adults in their home environments. Financial constraints within healthcare systems and the limited availability of institutional care facilities underscore the necessity of implementing guidelines for community-based care for older adults (Young et al., 2017). The increasing number of older adults at home grapple with advanced age and multiple health issues impacting their quality of life, with Lenardt et al. (2016) emphasizing the vital role of nursing care in the early detection and prevention of age-related fragility symptoms.

Community nurses in Slovenia are dedicated to enhancing the overall health of the population and ensuring the optimal health of individuals, families, and communities at every life stage, with a particular focus on vulnerable groups (Ramšak-Pajk & Ljubič, 2016; Barrett et al., 2016). They provide comprehensive nursing care to address the needs of a rapidly ageing population, emphasizing disease prevention and health promotion while promoting continuous and coordinated interdisciplinary collaboration among healthcare professionals across various levels of care (Dellafiore et al., 2022).

In the context of older adults, the recognition and assessment of physical and mental capabilities are crucial for categorizing individual needs and tailoring community-based care (Beard et al., 2016). Defining nursing diagnoses based on NANDA classification guidelines and intended nursing interventions can aid in swiftly identifying the needs of older adults in their home environments and systematically planning appropriate treatment. The NANDA classification draws upon an extensive range of diagnostic indicators, accompanying factors, and risk factors used in the nursing diagnosis process (Herdman et al., 2017). Employing these nursing diagnoses has numerous benefits for patient care, enabling more effective planning and consistency in the execution of nursing interventions. A comprehensive anamnestic process (Erden et al., 2018) fosters better communication between patients and healthcare teams. This approach to nursing care planning enhances the potential for older adults to attain a higher quality of life, greater independence, and the preservation of functional abilities (Doenges et al., 2019). High-quality nursing care, guided by well-planned interventions, serves as a platform for knowledge and skill development for both healthcare professionals and patients (Tuinman et al., 2020), fostering active self-care and enabling a higher quality of life in one's home environment throughout their later years (Lima et al., 2021).

The purpose of this study was to determine whether the prevalence of nursing diagnoses and nursing interventions differs according to the living environment, gender, and education of older adults. The research question guides us to determine the most frequently identified nursing diagnoses and planned nursing interventions for older adults in the home setting and whether they differ according to the living environment, gender, and education.

## 2 Methods

### *Design*

A mixed method design was adopted in this study. The study relates to the analysis of archival data collected as part of the Community Nurse Supporting Elderly in a changing Society (CoNSENSo) project in Slovenia, funded by European funds obtained from Interreg Alpine Space (Štemberger Kolnik et al., 2017). Hence, many issues related to the data collection process (i.e., number and locations of participants) were not possible to control as they were subject to the project recommendations provided by the lead partner. In order to obtain broad anamnestic data that were then used to make the nursing diagnoses studied in the present study, nurses used numerous measurement instruments during preventive visits to older adults in the home environment, for example: the WHOQOL questionnaire to assess the quality of life of older adults (The WHOQOL Group, 1998; World Health Organization, 2012); the Sunfrail Tools instrument for the identification of frailty and multimorbidity (Cesari et al., 2016); the Mini Nutritional Assessment (MNA) questionnaire response (Vellas et al., 1999); and other tools for demographic data such as nursing care history.

### *Settings and sample*

The sample in our study consisted of nursing diagnoses identified on a sample of 732 older adults aged 65+ with a permanent residence at an address in the study location. The average age of participants was 77.5 years ( $SD = 7.6$ ) and approx. two thirds were female (65%). The majority (84.9%) lived in detached houses, while 35.1% lived in multi-apartment houses in the lowland coastal area of Slovenia. The majority of participants were married (61.4%). More than half of the participants (106) had lower secondary education or higher. A total of 106 nursing diagnoses and 107 nursing interventions were used to prepare the research results.

### *Data collection*

The data included in the survey were collected by four nurses with the same level of education and approximately the same number of years of work experience under the mentorship of a senior nurse during the pilot testing. Nursing diagnoses were determined and entered into the database using a uniform methodology. For the research conducted during the CoNSENSo project, we obtained the permission of the National Medical Ethics Committee of the Republic of Slovenia and the permission of the lead project partner to process and publish the data collected in Slovenia.

### *Data analysis*

In the first phase, a qualitative analysis was performed to identify the nursing diagnoses according to NANDA (Herdman et al., 2017) from the documentation. In the second phase, the identified nursing diagnoses were quantitatively analysed and grouped by domains in the twelve domains listed below. Initially, a univariate analysis was performed to calculate the frequencies of identified nursing diagnoses. The cor-

responding frequencies and relative frequencies were calculated from the descriptive variables. The mean value and the standard deviation were calculated for numerical variables; in the event of a substantial deviation from the normal distribution, the mode, the median and the 1st and 3rd quartiles were calculated. Normal distribution was checked by the Shapiro-Wilk test and histogram. In the second phase, a bivariate analysis was performed in which the incidence of nursing diagnoses was compared between the urban and rural living environment, level of education (primary school or lower secondary/vocational school or higher), and gender (male/female). The chi-square test and the Mann-Whitney U test were used.

### 3 Results

Presented below are the nursing diagnoses with statistically significant differences according to the living environment, gender, or education.

#### *Nursing diagnoses and living environment differences*

Table 1 shows nursing diagnoses, the frequency of which differs significantly by urban/rural living environment. Statistically significant nursing diagnoses more common among older adults in urban settings were: “Risk-prone health behaviours” ( $p = 0.04$ ), “Ineffective health management” ( $p \leq 0.001$ ) and “Risk of overweight” ( $p = 0.03$ ). Older adults in rural settings are statistically significantly more often assigned nursing diagnoses such as “Impaired walking” ( $p \leq 0.001$ ), “Ineffective breathing pattern” ( $p \leq 0.001$ ), “Risk of impaired cardiovascular function” ( $p \leq 0.001$ ), “Bathing self-care deficit” ( $p \leq 0.01$ ), “Deficient knowledge” ( $p \leq 0.001$ ), “Chronic sorrow” ( $p = 0.03$ ), “Powerlessness” (00125) ( $p \leq 0.001$ ), “Impaired dentition” ( $p = 0.006$ ) and “Chronic pain (00133)” ( $p \leq 0.001$ ). Statistically significant ( $p \leq 0.05$ ) is observed for all comparisons.

**Table 1**

*Statistically Significant Differences in Nursing Diagnoses Incidence between Urban/Rural Living Environment/Statistično pomembne razlike v pojavnosti negovalnih diagnoz glede na ruralno in mestno življenjsko okolje*

| Domain (number of identified nursing diagnoses) | Nursing diagnoses                        | Living environment |       |       |       | Chi-square test |              |
|-------------------------------------------------|------------------------------------------|--------------------|-------|-------|-------|-----------------|--------------|
|                                                 |                                          | Rural              |       | Urban |       | $\chi^2$        | p            |
|                                                 |                                          | f                  | %     | f     | %     |                 |              |
| Health promotion (n = 9)                        | Risk-prone health behaviours             | 16                 | 6.90  | 58    | 11.70 | 4.05            | 0.04         |
|                                                 | Ineffective health management            | 37                 | 15.90 | 43    | 8.70  | 8.44            | $\leq 0.001$ |
| Nutrition (n = 10)                              | Risk of overweight                       | 1                  | 0.40  | 15    | 3.00  | 4.97            | 0.03         |
| Activity/Rest (n = 25)                          | Impaired walking                         | 63                 | 27.00 | 71    | 14.30 | 17.11           | $\leq 0.001$ |
|                                                 | Ineffective breathing pattern            | 30                 | 12.90 | 31    | 6.30  | 9.08            | $\leq 0.001$ |
|                                                 | Risk of impaired cardiovascular function | 45                 | 19.30 | 50    | 10.10 | 11.94           | $\leq 0.001$ |
|                                                 | Bathing self-care deficit                | 21                 | 9.00  | 21    | 4.20  | 6.67            | $\leq 0.001$ |
| Perception/Cognition (n = 10)                   | Deficient knowledge                      | 137                | 58.80 | 189   | 38.10 | 27.46           | $\leq 0.001$ |
| Coping/Stress tolerance (n = 15)                | Anxiety                                  | 16                 | 6.90  | 12    | 2.40  | 8.49            | $\leq 0.001$ |
|                                                 | Chronic sorrow                           | 9                  | 3.90  | 7     | 1.40  | 4.44            | 0.03         |
|                                                 | Powerlessness                            | 32                 | 13.70 | 16    | 3.20  | 28.46           | $\leq 0.001$ |
| Safety/Protection (n = 10)                      | Impaired dentition                       | 16                 | 6.90  | 13    | 2.60  | 7.48            | $\leq 0.001$ |
| Comfort (n = 5)                                 | Chronic pain                             | 97                 | 41.60 | 134   | 27.00 | 15.64           | $\leq 0.001$ |

### *Nursing diagnoses and education differences*

Data on the education of older adults who participated in the study were combined into two groups. The first group included respondents with a completed primary level of education or lower, while the second group included respondents with at least a secondary level of education or higher. In the participants with a higher level of education there was a significantly higher incidence of the nursing diagnoses "Risk-prone health behaviour" ( $p = 0.04$ ), "Risk of frail elderly syndrome" ( $p = 0.01$ ) and "Obesity" ( $p = 0.030$ ). The nursing diagnoses "Constipation" ( $p = 0.01$ ), "Functional urinary incontinence" ( $p = 0.028$ ), "Stress urinary incontinence" ( $p = 0.002$ ), "Impaired walking" ( $p \leq 0.01$ ), "Chronic fatigue" ( $p = 0.02$ ), "Ineffective breathing pattern" ( $p = 0.01$ ), "Bathing self-care deficit" ( $p \leq 0.001$ ), "Dressing self-care deficit" ( $p = 0.05$ ), "Deficient knowledge" ( $p = 0.05$ ), and "Impaired memory" ( $p \leq 0.001$ ) appear statistically significantly more frequently in older adults who have completed a primary level of education or lower. Statistically significant differences between education and the incidence of nursing diagnoses in older adults with a lower level of

education were also confirmed in other domains and are shown in Table 2. Statistical significance ( $p \leq 0.05$ ) is observed for all comparisons.

**Table 2**

*Statistically Significant Differences in Nursing Diagnoses Incidence between Older Adults with a Completed Primary Level of Education or Lower and a Completed Secondary Level of Education or Higher/Statistično pomembne razlike v pojavnosti negovalnih diagnoz med starejšimi odraslimi s končano in nedokončano osnovnošolsko izobrazbo ter končano srednješolsko izobrazbo in višjo izobrazbo*

| Domain (number of identified nursing diagnoses) | Nursing diagnoses               | Education                         |       |                                      |       | Chi-square test |          |
|-------------------------------------------------|---------------------------------|-----------------------------------|-------|--------------------------------------|-------|-----------------|----------|
|                                                 |                                 | Completed primary school or lower |       | Completed secondary school or higher |       |                 |          |
|                                                 |                                 | <i>f</i>                          | %     | <i>f</i>                             | %     | $\chi^2$        | <i>p</i> |
| Health promotion (n = 9)                        | Risk-prone health behaviour     | 14                                | 7.50  | 56                                   | 13.30 | 4.18            | 0.04     |
|                                                 | Risk of frail elderly syndrome  | 15                                | 8.10  | 13                                   | 3.10  | 7.30            | 0.01     |
| Nutrition (n = 10)                              | Obesity                         | 12                                | 6.50  | 52                                   | 12.30 | 4.72            | 0.03     |
| Elimination/Exchange (n = 13)                   | Constipation                    | 24                                | 12.90 | 28                                   | 6.60  | 6.48            | 0.01     |
|                                                 | Functional urinary incontinence | 13                                | 7.00  | 13                                   | 3.10  | 4.82            | 0.03     |
|                                                 | Stress urinary incontinence     | 34                                | 18.30 | 40                                   | 9.50  | 9.35            | ≤ 0.001  |
| Activity/Rest (n = 25)                          | Impaired walking                | 55                                | 29.60 | 68                                   | 16.10 | 14.49           | ≤ 0.001  |
|                                                 | Chronic fatigue                 | 56                                | 30.10 | 91                                   | 21.60 | 5.14            | 0.02     |
|                                                 | Ineffective breathing pattern   | 26                                | 14.00 | 31                                   | 7.30  | 6.68            | 0.01     |
|                                                 | Bathing self-care deficit       | 20                                | 10.80 | 19                                   | 4.50  | 8.40            | ≤ 0.001  |
|                                                 | Dressing self-care deficit      | 14                                | 7.50  | 16                                   | 3.80  | 3.84            | 0.05     |
| Cognition/Perception (n = 10)                   | Deficient knowledge             | 110                               | 59.10 | 198                                  | 46.90 | 7.71            | 0.01     |
|                                                 | Impaired memory                 | 90                                | 48.40 | 130                                  | 30.80 | 17.28           | ≤ 0.001  |
| Coping/Stress tolerance (n = 15)                | Anxiety                         | 13                                | 7.00  | 12                                   | 2.80  | 5.63            | 0.02     |
|                                                 | Powerlessness                   | 26                                | 14.00 | 19                                   | 4.50  | 16.91           | ≤ 0.001  |
| Safety/Protection (n = 10)                      | Risk of falls                   | 77                                | 41.40 | 111                                  | 26.30 | 13.77           | ≤ 0.001  |
|                                                 | Risk of impaired skin integrity | 13                                | 7.00  | 10                                   | 2.40  | 7.57            | 0.01     |
|                                                 | Impaired dentition              | 15                                | 8.10  | 12                                   | 2.80  | 8.29            | ≤ 0.001  |
| Comfort (n = 5)                                 | Acute pain                      | 5                                 | 2.70  | 30                                   | 7.10  | 4.65            | 0.03     |
|                                                 | Chronic pain                    | 84                                | 45.20 | 127                                  | 30.10 | 12.93           | ≤ 0.001  |
|                                                 | Risk of loneliness              | 39                                | 21.00 | 39                                   | 9.20  | 15.87           | ≤ 0.001  |

### *Nursing diagnoses and gender differences*

In the next step, the identified nursing diagnoses and nursing interventions were compared according to the gender of the older adults included in the study. Table 3 shows only nursing diagnoses with a statistically significant difference between gender. Statistical significance ( $p \leq 0.05$ ) is observed for all comparisons.

Nursing diagnoses from the domains “Elimination/Exchange”, “Activity/Rest”, “Safety/Protection” and “Comfort” were identified statistically significantly more often in females. For older male adults, the domains “Health promotion” and “Coping/Stress tolerance” were identified statistically significantly more often.

**Table 3**

*Statistically Significant Differences in Nursing Diagnoses Incidence between Genders/Statistično pomembne razlike v pojavnosti negovalnih diagnoz med spoloma*

| Domain (number of identified nursing diagnoses) | Nursing diagnoses                     | Gender |       |      |       | Chi-square test |         |
|-------------------------------------------------|---------------------------------------|--------|-------|------|-------|-----------------|---------|
|                                                 |                                       | Female |       | Male |       |                 |         |
|                                                 |                                       | f      | %     | f    | %     | $\chi^2$        | p       |
| Health promotion (n = 9)                        | Risk-prone health behaviour           | 37     | 7.70  | 37   | 14.60 | 8.51            | 0.004   |
|                                                 | Ineffective health management         | 44     | 9.20  | 36   | 14.20 | 4.21            | 0.04    |
| Elimination/Exchange (n = 13)                   | Stress urinary incontinence           | 70     | 14.60 | 8    | 3.10  | 23.02           | ≤ 0.001 |
|                                                 | Bowel incontinence                    | 3      | 0.60  | 6    | 2.40  | 4.10            | 0.04    |
| Activity/Rest (n = 25)                          | Fatigue                               | 130    | 27.20 | 51   | 20.10 | 4.52            | 0.03    |
| Coping/Stress tolerance (n = 15)                | Anxiety                               | 24     | 5.00  | 4    | 1.60  | 5.35            | 0.02    |
|                                                 | Grieving                              | 15     | 3.10  | 1    | 0.40  | 5.84            | 0.02    |
|                                                 | Risk of ineffective activity planning | 7      | 1.50  | 11   | 4.30  | 5.68            | 0.02    |
| Safety/Protection (n = 10)                      | Risk of falls                         | 166    | 34.7  | 63   | 24.80 | 7.60            | 0.01    |
| Comfort (n = 5)                                 | Chronic pain                          | 166    | 34.70 | 67   | 26.40 | 5.33            | 0.02    |
|                                                 | Risk of loneliness                    | 63     | 13.20 | 21   | 8.30  | 3.94            | 0.05    |

### *Identified nursing interventions*

Based on the nursing diagnoses, the nurses planned appropriate nursing interventions for each older adult. Nursing interventions (n = 107) were also classified into 10 domains used to classify nursing diagnoses for better transparency. Table 4 presents the defined domains and the number of care diagnoses per domain.

**Table 4**

*Number of Planned Nursing Interventions by Domain Showing Statistically Significant Differences by Gender, Education or Living Environment/Število načrtovanih intervencij zdravstvene nege glede na posamezno domeno, kjer so se pokazale statistično pomembne razlike glede na spol, izobrazbo ali bivalno okolje*

| <i>Domain</i>        | <i>Number of planned nursing interventions</i> | <i>Nursing interventions showing statistically significant differences by gender, education or living environment</i> |
|----------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Health promotion     | (n = 23)                                       | Teaching: individual                                                                                                  |
|                      |                                                | Counselling                                                                                                           |
|                      |                                                | Health education                                                                                                      |
|                      |                                                | Disease process teaching                                                                                              |
|                      |                                                | Teaching clinical reasoning and decision making                                                                       |
|                      |                                                | Exercise promotion                                                                                                    |
|                      |                                                | Teaching: progressive muscle relaxation                                                                               |
|                      |                                                | Learning: simple massages                                                                                             |
|                      |                                                | Medication management                                                                                                 |
| Nutrition            | (n = 11)                                       | Nutrition management                                                                                                  |
|                      |                                                | Nutrition counselling                                                                                                 |
|                      |                                                | Diet staging                                                                                                          |
|                      |                                                | Teaching: prescribed diet                                                                                             |
|                      |                                                | Fluid management                                                                                                      |
|                      |                                                | Electrolyte management                                                                                                |
|                      |                                                | Energy management                                                                                                     |
|                      |                                                | Weight management                                                                                                     |
|                      |                                                | Weight reduction assistance                                                                                           |
| Elimination/Exchange | (n = 8)                                        | Glucose management                                                                                                    |
|                      |                                                | Urinary elimination management                                                                                        |
|                      |                                                | Urinary habit training                                                                                                |
|                      |                                                | Bowel training                                                                                                        |

|                         |          |                                   |
|-------------------------|----------|-----------------------------------|
| Activity/Rest           | (n = 16) | Self-care assistance              |
|                         |          | Self-care assistance: toileting   |
|                         |          | Teaching: self-care               |
|                         |          | Perineal care                     |
|                         |          | Teaching: foot care               |
|                         |          | Teaching: eye care                |
|                         |          | Environmental management          |
|                         |          | Environmental management: comfort |
|                         |          | Environmental management: safety  |
|                         |          | Area restriction                  |
|                         |          | Positioning                       |
|                         |          | Airway management                 |
| Cognition/Perception    | (n = 17) | Emotional support                 |
|                         |          | Hope inspiration                  |
|                         |          | Calming technique                 |
|                         |          | Reality orientation               |
|                         |          | Family support                    |
|                         |          | Family involvement promotion      |
| Role/Relationship       | (n = 3)  | Family process maintenance        |
|                         |          | Family integrity promotion        |
| Coping/Stress tolerance | (n = 6)  | Mood management                   |
|                         |          | Decision-making support           |
| Life principles         | (n = 4)  | Spiritual support                 |
|                         |          | Active listening                  |
| Safety/Protection       | (n = 12) | Allergy prevention                |
|                         |          | Allergy management                |
|                         |          | Heat/cold application             |
|                         |          | Skin surveillance                 |
|                         |          | Fall prevention                   |
| Other                   | (n = 7)  | Pain management                   |
|                         |          | Measurement of vital function     |
|                         |          | Contacting a community nurse      |
|                         |          | Recommended contact with a doctor |
|                         |          | Community health development      |

Most nursing interventions are statistically significantly more often planned and implemented in the older adult population living in rural areas. The identified nursing interventions that were statistically more frequently performed in older adults in urban environments were “Family involvement promotion” in the “Cognition/Percep-

tion domain”, and “Recommended contact with a doctor” and “Community health development” in the “Other” domain.

Nursing interventions planned by nurses based on identified nursing diagnoses were statistically significantly more frequently planned in older adults with a lower level of education. The nursing interventions that were statistically more frequently planned for older adults with a higher level of education were found in the field health education, consulting and learning illness and treatment process in the “Health promotion” domain.

According to gender, nursing interventions were statistically significantly more often planned in older females.

## 4 Discussion

The nursing process, defined as a systematic and scientific problem-solving method in determining the healthcare needs of individuals and providing person-centred health care (Abdelkader & Othman, 2017), is crucial in nursing practice. Based on the anamnestic data of the nursing process, the nurses who collect the data establish nursing diagnoses, which represents the basis of the nursing process (Secer et al., 2021). Consistent determination of nursing diagnoses using evidence-based knowledge (Tuomikoski et al., 2018) is an excellent basis for the selection and implementation of patient-oriented healthcare interventions and higher-quality care. The research conducted in community health care showed a wide range of nursing problems for which the four nurses identified a wide range of nursing diagnoses and planned nursing interventions in older adults. The most frequently identified nursing diagnosis was “Deficient knowledge” in the “Perception/Cognition” domain, which was identified by nurses in 326 cases. In the population of older adults, “Deficient knowledge” is likely to occur very frequently, as it is to some extent related to the second most common nursing diagnosis found: “Impaired memory”. Both identified nursing diagnoses are also often identified in institutional care. Several studies (Chaves et al., 2010; de Lima Ferreira et al., 2019; Ferreira et al., 2017; Secer et al., 2021; Souza et al., 2021) find that “Impaired memory” is prevalent in 61.61% of hospitalized older adults. However, it should be noted that the assessment of nursing diagnoses from the domain of “Perception/Cognition” can be dependent on different factors (Montoril et al., 2016), such as living in a rural or urban environment. Nurses who visit older adults in their home environment and monitor them for a longer period of time are more attentive to external factors that affect the memory of older adults. In the present study, both nursing diagnoses were statistically significantly more frequently identified in older adults living in rural areas.

In these areas, we also identified the statistically significantly more frequent nursing diagnoses “Impaired walking”, “Chronic pain” and “Risk of falls”. Therefore, the perceived nursing diagnoses are often associated with greater difficulty in movement, the possibility of falls, and chronic pain occurring in both the hospital setting and pri-

mary health care (Araújo Morais et al., 2017; Othman et al., 2021). Often, the nursing diagnoses of “Chronic pain” and “Impaired physical mobility” occur in combination, which is one of the most prominent risk factors for falls in addition to “Impaired walking” (Santos et al., 2020). The risk of falls is further increased in the presence of cognitive impairment (Teles da Cruze et al., 2015), which nurses recognize in the largest range of identified nursing diagnoses.

“Impaired physical mobility”, “Impaired memory”, and “Impaired walking” are the nursing diagnoses most prevalent in institutions for long-term care (Ribeiro et al., 2019) and which corroborate the high vulnerability of the older adult population through functional dependency, family inadequacy, multiple disabilities, and cognitive, mood and nutritional decline (Reis & Jesus, 2015). External factors, such as education and living environment, influence the identification of these nursing diagnoses, which are statistically significant in older adults with lower levels of education and those living in rural areas.

“Impaired walking” is an identified nursing diagnosis, often also associated with obesity in older adults and the daily use of walking aids (Marques-Vieira et al., 2015). Otherwise, the nursing diagnosis of “Obesity” occurs in combination with various other chronic diseases or comorbidities (Felix et al., 2013). In the present study, we identified the nursing diagnosis of “Obesity” 64 times, and statistically significantly more often in participants who had completed a secondary level of education or higher. Felix et al. (2013) report that many studies provide evidence for linking obesity to multiple comorbidities that affect the health and quality of life of older adults and require self-care counselling to control and prevent complications associated with these pathologies. The incidence of the nursing diagnoses “Risk-prone health behaviour” and “Risk of overweight” is higher in urban environments (Lopez & Hynes, 2006), as older adults mostly live in apartment buildings, have a greater supply of unhealthy food, and move and socialize less than people in rural areas.

The incidence of nursing interventions somehow coincides with the nursing diagnoses. In the “Health education” domain, interventions were performed 503 times, which is fundamental for active ageing. Its aim is to mitigate the risk of fragility and vulnerability through participation, social control, and integrated and expanded actions (Carvalho et al., 2018) to reduce multimorbidity, and increase quality of life as long as possible in old age. In this context, nurses often performed counselling regarding a healthy lifestyle, nutrition (diet and fluid control) and stress management. In the urban environment, health education and counselling interventions were more technical in nature, aimed at improving access to health information and support for informal carers. Most nursing interventions were planned and performed in older adults who had completed a secondary level of education or higher, from which we can conclude that higher education is associated with a more individual interest in health prevention and counselling. Nurses focus on demonstrating care activities to help dependent older adults, influencing patient empowerment by providing instruction on self-care techniques (Milavec Kapun et al., 2022) and teaching strategies for the use of human and material resources (Rojas-Ocaña et al., 2021). There is also a statistically significant

difference between the incidence of nursing diagnoses and interventions by gender. In females, they are mainly present in the “Elimination/Exchange” and “Safety/Protection” domains. Statistically significant nursing diagnoses and interventions also occur in the mentioned domains with females who have a lower level of education. In men, nursing diagnoses were mostly detected in the “Activity/Rest” and “Comfort” domains and planned interventions were mainly found in the areas of cognition, nutrition counselling, and fall protection.

The nursing intervention “Active listening” was identified in 73% of older adults and is statistically significant in more highly educated people who live in urban environments. It is a common intervention identified by nurses in the home environment (Rojas-Ocaña et al., 2021). Active listening, as a nurse’s communication skill, is an important factor in a good nurse-patient relationship and can improve the sense of self-confidence, empowerment, and person-centred care of older adults (Webb, 2011). The nursing intervention “Vital signs measurement” was planned in 70% of older adults. Vital signs are a mechanism for universal communication of the patient’s condition and severity of disease, and their measurement assists nurses in identifying nursing diagnoses, assessing interventions, and making decisions about the patient’s response to treatment. This nursing intervention helps nurses to make an early identification of events that could affect the quality of treatment actions (Teixeira et al., 2015).

### *Implication for practice*

The research confirmed the need to determine nursing diagnoses for an effectively planned implementation of nursing interventions in community nursing care. In accordance with the established nursing diagnoses, the community nurses were able to classify a large number of planned nursing interventions, set priorities, and adjust the implementation according to the abilities of older adults. Using a review of nursing diagnoses and corresponding interventions with statistically significant differences in incidence according to gender, level of education, and living environment, community nurses can plan their work according to the knowledge and definition of the field. The greatest difficulty in the research was to manage the large amount of data required to identify nursing diagnoses and determine appropriate nursing interventions, which indicates the need to use digital technologies for meaningful and effective use of nursing diagnoses in community and family nursing.

### *Limitations of the study*

The study compares nursing diagnoses and interventions among older adults based on gender, education, and living environment. However, it is recommended to incorporate additional demographic data to better understand the social determinants affecting this population. Limitations include the study’s focus on one region, which may not represent the entire country, and the absence of nursing outcomes due to inadequate documentation. Future research should involve a larger sample size covering all regions and consider collecting nursing outcomes to enhance data quality.

## 5 Conclusion

Given the shortage of nurses and the increasing demands of an ageing population, the implementation of the nursing process is critical to support their workload. However, successful implementation depends on well-designed information and communication technology. Further research will be needed to explore these factors and inform the development of professional support systems for nurses, particularly in the planning phase of the nursing care process. The literature review shows the underutilization of nursing diagnoses and interventions in practice, especially in the community care of older adults. Incorporating these research findings is essential for patient-centred care that enables professional nursing practice.

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### **Identificirane negovalne diagnoze in intervencije zdravstvene nege pri starejših odraslih v patronažnem varstvu**

*Glede na zadnje podatke Statističnega urada Republike Slovenije je bilo leta 2022 v Sloveniji 21,4 odstotka populacije starejše od 65 let. Svetovna zdravstvena organizacija (World Health Organization, 2022) opozarja, da je ključnega pomena javna zdravstvena skrb za starejše odrasle, ki vključuje preoblikovanje zdravstvenega sistema z zagotavljanjem dolgotrajne oskrbe in ustvarjanjem pogojev za kakovostno življenje starejših odraslih v domačem okolju. Zaradi prenapolnjenih kapacitet institucionalnega varstva ostaja v domačem okolju vse več starejših odraslih, ki so v visoki starosti in imajo prisotne multimorbidne simptome, ki znatno zmanjšujejo kakovost njihovega življenja (Lenardt idr., 2016). Patronažne medicinske sestre v Sloveniji zagotavljajo celovito zdravstveno nego za zadovoljevanje potreb hitro starajočega se prebivalstva, usmerjeno v preprečevanje bolezni in krepitev zdravja ter interdisciplinarno sodelovanje med zdravstvenimi delavci na različnih ravneh oskrbe (Dellafore idr., 2022).*

*Pri načrtovanju kontinuirane zdravstveno-negovalne obravnave in v pacienta usmerjene zdravstvene nege je medicinski sestra lahko v pomoč uporaba negovalnih diagnoz na podlagi klasifikacije NANDA (Herdman idr., 2017) ter na podlagi le-teh načrtovanje intervencij zdravstvene nege. Visokokakovostna zdravstvena nega, ki jo vodijo dobro načrtovane intervencije zdravstvene nege, služi kot platforma za razvoj znanja in spretnosti tako za zdravstvene delavce kot za paciente (Tuinman idr., 2020), spodbuja aktivno samooskrbo in omogoča višjo kakovost življenja v domačem okolju v poznejših letih (Lima idr., 2021).*

*Namen raziskave je bil ugotoviti, ali se razširjenost negovalnih diagnoz in intervencij zdravstvene nege razlikuje glede na bivalno okolje, spol in izobrazbo starejših odraslih.*

Uporabljena je kombinacija kvantitativnega in kvalitativnega pristopa k raziskovanju. Študija se nanaša na analizo arhivskih podatkov, zbranih v okviru projekta CoSENSo v Sloveniji, financiranega iz evropskih sredstev, in pridobljenih iz Interreg Alpine Space (Štemberger Kolnik idr., 2017). V testno okolje so bile implementirane štiri diplomirane medicinske sestre s približno enakim številom let delovnih izkušenj, ki so na domu obiskale starejše odrasle, stare 65 in več let, z namenom izvedbe preventivnega obiska za pridobivanje širokega spektra anamnestičnih podatkov na temelju različnih že oblikovanih instrumentov. V raziskavo je bilo vključenih 732 starejših odraslih, starih 65 in več let, s stalnim ali začasnim prebivališčem na območju, vključenem v raziskavo. Povprečna starost udeležencev je bila 77,5 leta ( $SD = 7,6$ ) in cca. dve tretjini je bilo žensk (65 %). Največ (84,9 %) jih je živelo v samostojnih hišah, 35,1 % pa v večstanovanjskih hišah na nižinskem obalnem območju Slovenije. Največ udeležencev je bilo poročenih (61,4 %). Za izvedbo raziskave je bilo pridobljeno dovoljenje Komisije Republike Slovenije za medicinsko etiko, ki priznava standarde Helsinške deklaracije, ter prav tako dovoljenje vodilnega projektnega partnerja. V prvi fazi je bila izvedena kvalitativna analiza dokumentacije za identifikacijo negovalnih diagnoz po klasifikaciji NANDA (Herdman idr., 2017). V drugi so bile ugotovljene negovalne diagnoze, ki so bile kvantitativno analizirane in razvrščene na dvanajst področij. Skupaj je bilo identificiranih 106 negovalnih diagnoz in 107 intervencij zdravstvene nege. Izvedena je bila univariatna analiza za izračun pogostosti prepoznanih negovalnih diagnoz. Ustrezne frekvence in relativne frekvence so bile izračunane iz opisnih spremenljivk. Za numerične spremenljivke smo izračunali povprečno vrednost in standardno deviacijo in v primeru bistvenega odstopanja od normalne porazdelitve izračunali modus, mediano ter 1. in 3. kvartil. Normalno porazdelitev smo preverili s Shapiro-Wilkovim testom in histogramom. V drugi fazi je bila izvedena bivariatna analiza, v kateri smo primerjali pojavnost negovalnih diagnoz med mestnim in podeželskim življenjskim okoljem, glede na stopnjo izobrazbe (osnovna šola ali nižja/poklicna šola ali višja šola) in med spoloma (moški/ženski). Uporabljena sta bila test hi-kvadrat in Mann-Whitneyjev U-test.

Ugotovili smo, da obstajajo statistično značilne razlike med pojavnostjo negovalnih diagnoz glede na stopnjo izobrazbe, spol starejših odraslih ter področje bivanja (urbano/ruralno). Najpogostejše identificirana negovalna diagnoza je bila »pomankljivo znanje«, ki so jo medicinske sestre prepoznale v 326 primerih in je do neke mere povezana z drugo najpogostejšo negovalno diagnozo »oslabljen spomin«. Obe ugotovljeni negovalni diagnozi se pogosto pojavljata tudi v institucionalnem varstvu ter pri 61,61 % hospitaliziranih starejših odraslih (Chaves idr., 2010; de Lima Ferreira idr., 2019; Ferreira idr., 2017; Secer idr., 2021; Souza idr., 2021). V pričujoči raziskavi sta bili obe negovalni diagnozi statistično značilno pogostejše ugotovljeni pri starejših odraslih, ki živijo na podeželju. Statistično značilno pogostejše negovalne diagnoze pri starejših odraslih na podeželju pa so bile »otežena hoja«, »kronična bolečina« in »tveganje za padec«. Zaznane negovalne diagnoze so pogosto povezane z večjimi težavami pri gibanju, možnostjo padcev in kronično bolečino, ki se pojavlja tako v bolnišničnem okolju kot v obravnavi na primarni ravni zdravstvenega varstva (Araújo Morais idr., 2017; Othman idr., 2021). Pogosto se negovalni diagnozi »kronična bo-

lečina« in »otežena telesna gibljivost« pojavita v kombinaciji, kar je poleg »otežene hoje« eden najvidnejših dejavnikov tveganja za padce (Santos idr., 2020). Tveganje za padce je dodatno povečano ob prisotnosti kognitivnih motenj (Teles da Cruze idr., 2015), ki jih medicinske sestre prepoznajo v največjem obsegu pri identificiranih negovalnih diagnozah. Zaznane negovalne diagnoze, poleg »motnje spomina«, odražajo večjo ranljivost starejšega odraslega prebivalstva zaradi funkcionalne odvisnosti, družinske neustreznosti, večkratnih motenj razpoloženja in prehranjevanja ter kognitivnega upada (Reis in Jesus, 2015). Na prepoznavanje teh negovalnih diagnoz, ki so statistično pomembne pri starejših z nižjo stopnjo izobrazbe in tistih, ki živijo na podeželju, vplivajo tudi zunanji dejavniki, kot sta izobrazba in bivalno okolje. Incidenca negovalnih diagnoz »tveganje za zdravje« in »tveganje za prekomerno telesno težo« je večja v urbanih okoljih (Lopez in Hynes, 2006), saj starejši ljudje večinoma živijo v stanovanjskih zgradbah, imajo večjo ponudbo nezdrave hrane ter se manj gibljejo in družijo kot ljudje na podeželju. V pričujoči raziskavi smo negovalno diagnozo »debelost« ugotovili 64-krat, statistično značilno pogostejše pri udeležencih s srednjo in višjo stopnjo izobrazbe. Felix idr. (2013) poročajo, da številne študije zagotavljajo dokaze o povezavi debelosti s številnimi sočasnimi boleznimi, ki vplivajo na zdravje in kakovost življenja starejših odraslih in zahtevajo svetovanje o samooskrbi za nadzor in preprečevanje zapletov, povezanih s temi patologijami.

Pojavnost intervencij zdravstvene nege nekako sovпада z negovalnimi diagnozami. Na področju »zdravstvene vzgoje« so bile intervencije zdravstvene nege izvedene 503-krat, kar je temeljnega pomena za aktivno staranje z namenom ublažitve tveganja krhkosti in ranljivosti. Z družbenim nadzorom ter integriranimi in razširjenimi akcijami (Carvalho idr., 2018) dosežemo zmanjšanje multimorbidnosti in povečanje kakovosti življenja starejših odraslih čim dlje v starost. Medicinske sestre so v tem okviru pogosto izvajale svetovanja glede zdravega življenjskega sloga, prehrane ter obvladovanja stresa. Večina intervencij zdravstvene nege je bila načrtovana in izvedena pri starejših s končano srednjo in višjo stopnjo izobrazbe, iz česar lahko sklepamo, da je visokošolska izobrazba povezana z večjim zanimanjem posameznika za zdravstveno preventivo in svetovanje. Ugotovili smo statistično značilno razliko med pojavnostjo negovalnih diagnoz in intervencij zdravstvene nege po spolu. Pri ženskah so bile zaznane predvsem v domeni »izločanje/odvajanje« in »varnost/zaščita« pri tistih z nižjo stopnjo izobrazbe. Pri moških so bile negovalne diagnoze večinoma zaznane na področjih »aktivnost/počitek« in »udobje«, načrtovani posegi pa so bili predvsem na področjih kognicije, prehranskega svetovanja in zaščite pred padci.

Raziskava izpostavlja nujnost določanja negovalnih diagnoz za učinkovito načrtovano izvajanje intervencij v patronažni in družinski zdravstveni negi. Skladno s postavljenimi negovalnimi diagnozami lahko medicinske sestre v patronažnem varstvu načrtujejo intervencije zdravstvene nege, postavijo prioritete in prilagodijo izvedbo glede na zmožnosti starejših. To kaže, da lahko poznavanje nekaterih značilnosti starejših odraslih pomaga medicinskim sestram pri optimizaciji procesa zdravstvene nege in s tem pri izbolšanju kakovosti zdravstvene nege te populacije. Velika težava v raziskavi je bila obvladovanje velike količine podatkov, potrebnih za prepoznavanje negoval-

*nih diagnoz in določanje ustreznih intervencij zdravstvene nege, kar kaže na nujnost uporabe digitalnih tehnologij za smiselno in učinkovito uporabo negovalnih diagnoz. Obravnavana tema odpira več pomembnih vprašanj in nakazuje potrebo po dodatnih raziskavah na tem področju, saj je bila pričujoča raziskava izvedena samo v eni regiji, kar pa ne predstavlja demografsko pomembne značilnosti za celotno državo. Spoznanja v raziskavi vodijo do zaključka, da so negovalne diagnoze osnova za delo medicinskih sester v patronažnem varstvu za namene načrtovanja intervencij zdravstvene nege, predvsem pa za poenotenje in razumevanje kontinuirane zdravstvene nege ter zagotavljanje kakovostnejših in na pacienta usmerjenih intervencij zdravstvene nege.*

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