Working time distribution and administrative burden in Austrian community health nursing: A cross-sectional survey

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ABSTRACT

Background: Community health nursing was introduced in Austria in 2022. As the 117 pilot projects now transition into centrally managed services, data on nurses' working time distribution and client contact patterns are essential for workforce and location planning to ensure optimal service delivery.
Objective: To analyse the working time distribution and client contact patterns of Austrian community health nurses during the pilot phase (2022–2024).
Design: Cross-sectional survey.
Setting(s): An online survey (April to June 2023) among community health nurses captured their working time distribution and client contact patterns.
Participants: Out of the N = 220 eligible community health nurses, 121 (55%) nurses answered the questions relevant to working time analysis and 115 (52%) for studying regional disparity of service delivery.
Methods: The analysis used descriptive statistics, statistical tests, and regression analysis, employing Excel®, Stata® and R.
Results: Our analysis shows that 92% of the community health nurses in Austria work in non-urban areas. On average, they have one client contact every five working hours, lasting around 75 minutes. Seventy per cent of these encounters result in follow-ups, usually within ten days. Across all regions, 28% of the Austrian community health nurses' working time is dedicated to home visits and in-office consultations, 7% to outreach efforts aimed at attracting new clients, and 6% to travelling. Further, 29% of time is spent on administration and project management, 8% on team meetings, and 20% on networking and public relations. Service delivery varies significantly by region: rural nurses report fewer consultation hours and more time spent on travelling. Regardless of geography, the time spent on organisational tasks increases disproportionately—and more than any other activity—as total working hours increase.
Conclusions: Each hour spent with a client requires an hour of administration, with no observable efficiency gains in administrative tasks as working hours increase. These findings highlight the need to explore whether targeted organisational support, such as administrative assistance or digital documentation tools, may improve efficiency. Additionally, current restrictions on client outreach and age eligibility may unnecessarily hinder service effectiveness and accessibility.

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Tweetable abstract: Study of Austrian community health nurses reveals: for every hour with clients, nurses spend an equal hour on administration. Administrative burden grows disproportionately with longer working hours, with no efficiency gains.

What is already known.

- Community health nursing was introduced in Austria in 2022, and the pilot phase ended by late 2024.
- Austrian community health nurses align with Public Health Intervention Wheel principles without substituting direct (mobile) care services.
- In 2023, Austrian community health nurses primarily operated at the individual level, with limited engagement in community-wide or systemic interventions.

What this paper adds.

- A detailed analysis of working time distribution across a set of distinct key domains: (1) client engagement, (2) organisational duties, (3) stakeholder engagement, and other activities.
- Evidence that for every hour spent with a client, nurses dedicate an equivalent amount of time to organisational tasks. Effort for administrative tasks rises substantially with total weekly working time.
- Insights into geographic disparities in service delivery, particularly in the distribution of home visits and in-office consultations.

Efficient resource allocation is essential for sustaining healthcare systems that can meet the challenges posed by ageing populations and increasing multimorbidity. Given the scarcity of healthcare resources, specialisation and division of labour are crucial for enhancing both service effectiveness and overall system efficiency. Community health nurses exemplify this approach by providing specialised public health services outside hospital settings—a long-standing tradition in many countries (Schaffer et al., 2022; Glavin, Schaffer, and Kvarme, 2019). Recognising their critical role in strengthening healthcare systems, the World Health Organization (WHO, 2017) has highlighted community health nursing as a key strategy for addressing these challenges.

Unlike top-down healthcare reforms, Austria's community health nursing initiative emerged from a bottom-up approach, with 115 pilot projects (later 117) launched at the municipal level. This decentralised, EU-funded rollout created a diverse landscape of service delivery, offering a rare case study of how a novel public health service takes shape in practice. As the initiative now transitions into a centrally managed and funded system, understanding what community health nurses actually do, and how they use their working time, becomes crucial. Rather than relying solely on theoretical frameworks, future policy decision making can benefit from practical insights gained from these early experiences. Analysing Austria's pilot phase, therefore, provides valuable lessons for national and international healthcare policy and service development.

1. Background

As part of the Austrian Recovery and Resilience Plan – developed within the European Union's *NextGenerationEU* recovery instrument to support social and economic recovery from the COVID-19 pandemic (EU, 2021) – the European Union initially funded 115 pilot projects in 2022 to establish a community health nursing model in Austria (Gesundheit Österreich GmbH, 2024). Shortly after the start, two additional pilot projects were launched. The pilot phase ended as planned in December 2024, resulting in varied approaches to the initiative's future. While some of Austria's federal states committed full or partial funding to maintain community health nurse services in their original form, others integrated community health nursing into pre-existing healthcare structures, thereby tweaking the tasks of the nurses.

Although Austria has a long-standing system of publicly funded direct care and home nursing services, these have traditionally focused on individual treatment and support. In contrast, community health nursing aims at a population-based, public health approach, strengthening preventive care and promoting health equity at the community level. However, until recently, Austria's primary care was mainly delivered by medical professionals such as general practitioners (Lidauer and Stummer, 2023).

The overarching goal of the Austrian community health nursing initiative was to address unmet healthcare needs for elderly individuals, improve the public's overall well-being, and strengthen health literacy. Community health nurses were expected to help individuals in need of care and health support, thereby enabling older adults to remain in their homes as long as possible. More strictly, the Austrian initiative sought to primarily support older adults (75+) with an imminent or existing need for information, counselling, care, and support, as well as their families and caregivers. This restriction somewhat contradicts the preventive focus of community nursing. Later, we will examine to what extent the involved nurses adhere to this rule in their daily practice. During the pilot phase, each community health nurse was assigned to a population of 3000 to 5000 individuals, depending on local population density (Gesundheit Österreich GmbH, 2024). All nurses were required to be registered under Austrian law (Kovacevic, Behrens, and Hyll, 2024). This means that they are qualified as "Diplomierte Gesundheits- und Krankenpflegepersonen" (DGKP), having completed the nationally regulated nursing education with the license to practice under Austrian healthcare legislation.

A previous study on Austrian community health nursing during the pilot phase (Kovacevic, Behrens, and Hyll, 2024) analysed 56 individual nursing interventions based on the Public Health Intervention Wheel and Nursing Intervention Classification. A key finding addressed whether this new public health service complemented or substituted existing direct (mobile) care services—ultimately, they did not. The current study goes beyond nursing activities and focuses on workforce planning by analysing how working time is distributed across ten distinct activity categories. Unlike aggregated classifications, these categories were surveyed separately and grouped into four main domains: (1) client engagement, (2) organisational duties, (3) stakeholder engagement, and other activities. Additionally, to static results about work time distribution, we also analyse the effects of an additional working hour for nurses with different current weekly working hours. Understanding these patterns is crucial for optimising working time allocation as community health nursing transitions from the decentralised pilot to a few centrally managed services.

2. Methods

2.1. Design

This study employs a cross-sectional design using an online survey.

2.2. Participants and setting

We surveyed community health nurses employed in one of 115 Austrian pilot projects between April and June 2023. Invitations to participate were sent via email to project management offices, covering all local projects (contact information was publicly available). These invitations outlined the study's objectives, measures to ensure anonymity, contact details for the research team, and a link to the online survey administered via LimeSurvey. The full questionnaire is available at Kovacevic et al. (2023). Participation was entirely voluntary, resulting in a convenience sample.

2.3. Response rate

Out of the $N=$ 220 eligible community health nurses, 121 (55 %) nurses answered the questions relevant to working time analysis and 115 (52 %) for studying regional disparity of service delivery.

2.4. Measurements

Data on client contacts and contacting is based on items regarding the number of contacts per week, the average duration of contacts (in minutes), and follow-up patterns (clients agreeing to follow-ups per 100 initial contacts and typical intervals between contacts in days). In addition, we collected data on weekly working hours dedicated to clients stratified by age groups.

Data on the distribution of working time was collected across ten distinct activity categories, measured as a percentage of total working time. These categories are grouped into four overarching domains:

1. **Client engagement**: This domain encompasses direct interactions with clients to build relationships, deliver services, and address their needs. It includes *home visits* (both preventive and non-preventive), *in-office consultations, direct outreach activities to acquire new clients* and related travelling.
2. **Organisational duties**: This domain covers tasks essential for ensuring smooth service delivery and operational efficiency. It includes *administration, project management*, and *team meetings*.
3. **Stakeholder engagement**: This domain involves establishing and maintaining relationships with key individuals and groups, including clients, colleagues, healthcare providers, policymakers, community organisations, and funding bodies. It comprises *networking* and *public relations*.
4. **Other activities**: This residual category includes all activities that do not fit within the first three domains.

To analyse geographical variations in service delivery, we categorised the nurses' working locations using the DEGree of URBAnisation (DEGURBA) classification from Statistics Austria (Statistics Austria, 2024). This classification distinguishes between urban areas (with a population density greater than 1500 people per square kilometre and a total population exceeding 50,000), suburban areas (with a population density greater than 300 people per square kilometre and a total population over 5000), and rural regions.

2.5. Data analysis

For exploratory analysis, we used descriptive statistics to characterise the central tendencies and distributions of contact patterns and working time. To examine the impact of changes in total working time on activity distribution, we conducted simple regressions with total working hours as the independent variable and the relative shares of various activities as the dependent variables.

We estimated the following regression models, one for each activity category $i = 1,\ldots,10$, to derive the impact of an additional working hour on the activity distribution:

$$y_i = \alpha_i + \beta_i w + \varepsilon.$$

Here, y_i represents the share of working time dedicated to category i (which equals the absolute working time v_i spent doing activity i divided by the total working time w). The parameter α_i is the constant share for activity category i, β_i represents the change in the share of working time dedicated to category i when the total working time w increases by one hour, and ε is the error term.

This model can be equivalently reformulated as a model for the absolute working time v_i dedicated to activity i,

$$v_i = \alpha_i w + \beta_i w^2 + w\varepsilon,$$

which has the reasonable property that no time is dedicated to any activity if weekly working hours equal zero, and the error term increases with weekly working hours.

Estimated equations are then given by

$$\widehat{y}_i = \widehat{\alpha}_i + \widehat{\beta}_i w_i, \text{ respectively } \widehat{v}_i = \widehat{\alpha}_i w + \widehat{\beta}_i w^2$$

The absolute expected effect $\gamma_i(w)$ of an additional weekly working hour on the time dedicated to activity category i is obtained by taking the derivative on the right-hand side of the second estimated equation with respect to w.

$$\gamma_i(w) := \frac{dv_i}{dw} = \widehat{\alpha}_i + 2\widehat{\beta}_i w.$$

These changes associated with each additional weekly working hour depend linearly on the current number of weekly working hours w.

It is important to note that, because $\sum_i v_i = w$, the parameters $\widehat{\alpha}_i$ must sum up to one, while the parameters $\widehat{\beta}_i$ sum up to zero (for $i = 1,\ldots,10$). As a result, even though the regression models are estimated independently for each activity category, it is ensured that for any value of weekly working time w, the effects $\gamma_i(w)$ sum up to one hour.

All calculations were performed using Excel®, Stata®, and R.

2.6. Ethical considerations

The Ethics Committee at the University of Krems provided consent on 23.02.2023 under No EK GZ 39/2021–2024. All participants were shown the privacy policy and had to give their consent at the beginning of the online survey. The study adhered to European data protection guidelines. No patients and no animals were involved at any point during the study.

3. Results

3.1. Sample characteristics

The median age of community health nurses was 41 years, with 90 % identifying as female. Most had extensive professional experience, having worked as registered nurses for an average of 15 years, and had been active in their community health nursing roles for about ten months at the time of the survey. Regarding educational background, the majority completed their training at Austrian Healthcare and Nursing Academies prior to the Bologna reform, while a smaller proportion held tertiary degrees, including master's and, less frequently, bachelor's degrees in nursing (Kovacevic, Behrens, and Hyll, 2024).

Table 1
Description of client contacts.

Features of client contacts	N	Q2 (Q1, Q3)
Number of client contacts per working hour (count)	128	0.2 (0.1, 0.3)
Duration of a client contact (min)	128	75.0 (60.0, 90.0)
Proportion of follow-up clients (from first contact, %)	129	70.0 (50.0, 80.0)
Follow-up interval (same client, d)	122	10.0 (7.0, 21.0)
Time for client interaction (proportion of working hours, %)	121	38.1 (30.0, 50.0)
Do community health nurses actively pursue first contacts?		**count (%)**
Yes	130	55 (42.3 %)
No	130	65 (50.0 %)
No answer	130	10 (7.7 %)
Location of client residency (by population density)		
Urban area	122	10 (8.2 %)
Suburban area	122	55 (45.1 %)
Rural area	122	57 (46.7 %)

Weekly hours with clients of different age groups		Q2 (Q1, Q3)
Up to 3 years	128	0 (0, 0)
>3–18 years	128	0 (0, 0))
>18–65 years	127	2 (0, 3)
>65–75 years	127	4 (2, 6)
Older than 75 years	124	5 (3, 10)

3.2. Properties of client contacts

This section provides a comprehensive understanding of client contacts—specifically, what they involve, the resources required, and the time committed to each interaction. In this context, a "client contact" refers to any interaction between a community health nurse and a client (or their relatives), including home visits, in-office consultations, as well as nurse-initiated outreach efforts via phone, email, or in-person visits. Notably, half of the nurses surveyed reported not actively reaching out to potential clients (see Table 1).

The median number of client contacts per working hour is 0.2 (see Table 1), indicating that a nurse has one client contact every five working hours. These contacts typically last about 75 minutes (median duration), varying between 60 and 90 minutes (interquartile range, IQR). Approximately 70 % of the clients who have an initial contact agree to have regular follow-ups, which occur at a median interval of 10 days between successive contacts (IQR: 7 to 21 days). Table 1 also shows that nearly 92 % of Austrian community health nurses serve communities in non-urban areas.

Table 1 includes the distributions of weekly hours dedicated to clients by client age group. While the main focus is on clients older than 75, as demanded by the project guidelines, substantial effort is also given to clients at retirement age (65–75 years) and, to a lesser extent, to the working population (18–65 years). Teenagers and children are serviced only rarely.

3.3. Time distribution across activity categories

The client engagement domain (consisting of *home visits, in-office consultations, reaching out to acquire new clients,* and *travelling*) accounts for approximately 41 % of total working time. The overall value for the client engagement domain varies slightly based on location: 38 % in urban areas, 40 % in suburban areas, and 41 % in rural areas.

As shown in Fig. 1, home visits play a central role in service delivery, particularly in suburban (21 %) and rural areas (19 %), but are less frequent in urban settings (12 %). Notably, the proportion of preventive home visits relative to non-preventive visits is highest in suburban areas, followed closely by rural regions. In contrast, in urban areas, only one in six home visits serves a preventive purpose.

A reverse pattern emerges for in-office consultations, which are more common in urban areas (14 %) compared to suburban (7 %) and rural regions (8 %). Meanwhile, the time dedicated to contacting potential clients is similar in urban and suburban areas (8 %) but slightly lower in rural settings (5 %). Fig. 1 further illustrates that conducting community health nursing activities in a suburban area does not lead to increased travel times when compared to an urban area. However, in rural areas, travel time doubles compared to serving more densely populated regions (9 % vs. 4 %).

Organisational activities require a significant portion (37 %) of a community health nurse's working time, comparable to the time spent on client engagement (41 % including travelling and 35 % without). In rural areas, administration alone consumes 20 % of working time, while in urban settings, this figure decreases to 16 %. Project management accounts for 10–13 % of the time, with urban areas generally requiring a higher percentage. Team meetings take up about 8–10 % of working time, showing little variation between regions.

Stakeholder engagement, which includes networking (9–11 %) and public relations (8–11 %), accounts for approximately 19 % of working time across all regions. Urban nurses spend slightly more time networking (11 %) than their rural counterparts (9 %). Other activities account for roughly 3 % of total working time, with little variation accountable to the population density of the catchment area.
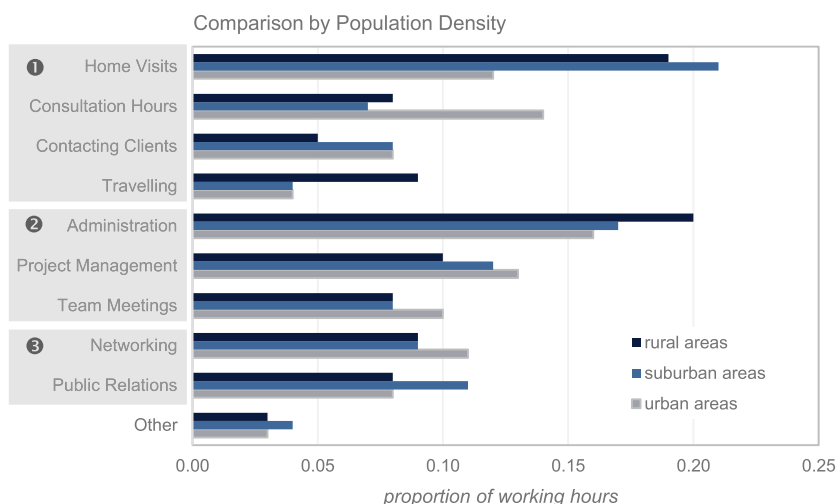

Fig. 1. Ordered bar chart of the (relative) composition of working time with respect to types of community health nursing activities (❶ indicates the category client engagement, ❷ represents the organisational activity category and ❸ marks the category stakeholder engagement). The proportion of the working time is stratified by the population density of the catchment area.

3.4. Changes in absolute activity level and activity shares

In the previous section we discussed the overall composition of working hours as proportions of the working time. However, the composition varies with weekly working hours, for example between full-time and half-time staff: Table 2 presents the results of the regression models, discussed in the methods section, reporting for each activity the estimated constant share $\widehat{\alpha}_i$ and its marginal change per additional weekly working hour $\widehat{\beta}_i$, together with significance tests for these effects. With each additional weekly working hour, the shares of time spent on administrative work and project management increases by nearly 0.2 percentage points. In contrast, the proportion of time dedicated to team meetings and networking decrease by 0.26 and 0.11 percentage points per additional weekly working hour, respectively. Notably, we do not observe any statistically significant changes in the shares in any of the activity categories comprising the client engagement domain.

Moreover, recall that the absolute time dedicated to activity i is modelled as a quadratic function $\widehat{v}_i = \widehat{\alpha}_i w + \widehat{\beta}_i w^2$ of weekly working hours w. The marginal change in dedicated time per additional weekly working hour, $\gamma_i(w) = \frac{dv}{dw} = \widehat{\alpha}_i + 2\widehat{\beta}_i w$, represents the slope at workload w. Solving $\gamma_i(w) = 0$ gives the extremum at $w^* = -\widehat{\alpha}_i/(2\widehat{\beta}_i)$. If $\widehat{\beta}_i > 0$, this is a global minimum; if $\widehat{\beta}_i < 0$, a global maximum. Because, in these cases, the quadratic function has only one extremum, this specification clearly delineates the ranges of w over which increasing weekly hours raises or lowers time devoted to activity i.

From Table 2 it can be derived that for all activities with positive $\widehat{\beta}_i$, the minimum lies at a negative value of weekly working hours w. Therefore, within the feasible range of $[0, 45]$ hours, time dedicated to activity i increases monotonically with workload. Likewise, most activities with negative $\widehat{\beta}_i$ have their maximum beyond $w = 45$, also yielding a monotonic increase on $[0, 45]$.

Only travelling and team meetings, with maxima at $w^* = 39.2$ and $29.0\ h$ respectively, exhibit a peak within $[0, 45]$, after which additional hours reduce time spent on those tasks. The saved time adds to the additional working hour, further enlarging the time that can be allocated to the other tasks.

Table 3 shows the $\gamma_i(w)$ values for w between 5 and 40 hours, illustrating how an extra hour is distributed across the ten activity categories, and highlighting the reallocation effects when $\widehat{\beta}_i < 0$. By construction, $\sum_i \gamma_i(w) = 1$ hour ($= 60$ minutes) for any given w.

Comparing the values for 20 hours (part-time) and 40 hours (full-time), we observe that at 20 hours, an additional hour leads to 12.4 additional minutes for administration, which is the largest increase for an individual activity in this table. 11.9 minutes are allocated to home visits and 8.0 minutes to project management. Together, the additional time dedicated to these three activities already exceeds half of the whole additional hour. The allocation pattern changes substantially at 40 hours of working time. While the additional time budget for home visits and other client-facing activities roughly stays at the same level, the additional time for project management and administration increases markedly to 12.5, respectively 16.7 minutes.

Because $\widehat{\beta}_i$ for team meetings is negative, the marginal time for meetings at 40 ours turns negative, meaning further hours are reallocated away from meetings toward other organisational tasks—even though the total weekly time spent in meetings remains roughly the same at 20 h and 40 h.

While these effects are statistically significant in aggregate, the concrete behaviour that leads to these effects and the underlying causes must remain speculative as no data on these issues are available. Moreover, predictive accuracy for individual nurses, especially near full-time hours, may suffer, since variability of residuals grows with w under our quadratic specification.

4. Discussion

4.1. Regional variations in service delivery

We find that Austrian community health nurses allocate 35 % of their working time to direct client interactions, including home visits (20 %), in-office consultations (8 %), and actively reaching out to acquire new clients (7 %). Regional differences are evident:

Table 2
The impact of an additional hour of working time on the relative composition of activities ($N = 121$). Bold formatting indicates statistical significance. The parameter $\widehat{\alpha}_i$ is the constant share for activity category i, $\widehat{\beta}_i$ represents the change in the share of working time spent on activity i when the total working time w increases by one hour.

Activity category	$\widehat{\beta}_i$	std. errors	p-value	$\widehat{\alpha}_i$	std. errors	p-value
Home Visits	0.0002	0.001	0.884	0.190	0.036	**0.000**
Preventive Visits	0.0001	0.001	0.897	0.066	0.018	**0.000**
Non-Preventive Visits	0.0001	0.001	0.916	0.124	0.027	**0.000**
In-Office Consultations	0.0005	0.001	0.482	0.069	0.022	**0.002**
Making first Client Contacts	−0.0002	0.000	0.696	0.072	0.014	**0.000**
Travelling	−0.0012	0.001	0.226	0.094	0.032	**0.004**
Administration	0.0018	0.001	**0.048**	0.134	0.025	**0.000**
Project Management	0.0019	0.001	**0.027**	0.058	0.024	**0.015**
Team Meetings	−0.0026	0.001	**0.000**	0.151	0.017	**0.000**
Networking	−0.0011	0.000	**0.021**	0.123	0.014	**0.000**
Public Relations	−0.0005	0.001	0.528	0.107	0.022	**0.000**
Other	0.0012	0.000	0.016	0.002	0.013	0.881

Table 3

Absolute change in working time per additional hour, $\gamma_i(\boldsymbol{w})$, interpretable as the distribution of an additional working hour across various activity categories, depending on $\boldsymbol{w}$. Effects are displayed in minutes.

Activity categories	Weekly working time (w, in hours)							
	5	10	15	20	25	30	35	40
Home Visits	11.5	11.6	11.7	11.9	12.0	12.1	12.2	12.3
Preventive Home Visits	4.0	4.1	4.2	4.2	4.3	4.3	4.4	4.4
Non-Preventive Home Visits	7.5	7.5	7.6	7.7	7.7	7.8	7.8	7.9
In-Office Consultation	4.4	4.7	5.1	5.4	5.7	6.0	6.3	6.6
Making First Contacts	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5
Travelling	4.9	4.2	3.4	2.7	2.0	1.2	0.5	−0.3
Administration	9.1	10.2	11.3	12.4	13.4	14.5	15.6	16.7
Project Management	4.6	5.7	6.9	8.0	9.1	10.2	11.3	12.5
Team Meetings	7.5	5.9	4.4	2.8	1.3	−0.3	−1.8	−3.4
Networking	6.7	6.0	5.4	4.7	4.1	3.4	2.8	2.1
Public Relations	6.2	5.9	5.6	5.3	5.0	4.8	4.5	4.2
Other	0.8	1.5	2.2	2.9	3.7	4.4	5.1	5.8
Sum of all changes (in min)	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**
Client engagement	**25.1**	**24.7**	**24.3**	**23.8**	**23.4**	**23.0**	**22.6**	**22.2**
Organisational activity	**21.2**	**21.9**	**22.5**	**23.2**	**23.8**	**24.5**	**25.1**	**25.8**
Stakeholder engagement	**12.9**	**11.9**	**11.0**	**10.1**	**9.1**	**8.2**	**7.3**	**6.3**
Other	**0.8**	**1.5**	**2.2**	**2.9**	**3.7**	**4.4**	**5.1**	**5.8**

time dedicated to contacting potential clients is similar in urban and suburban areas (8 %) but slightly lower in rural settings (5 %). Home visits are twice as common in suburban (21 %) and rural areas (19 %) as in urban settings (12 %). In contrast, in-office consultations are more frequent in urban areas (14 % compared to suburban (7 %) and rural regions (8 %). Travel time in rural areas is significantly higher (9 % vs. 4 %), with a 7 %-average.

Urban areas offer better mobility and healthcare accessibility, likely leading to a higher frequency of in-office consultations. Conversely, suburban and rural regions (each hosting roughly 46 % of the total workforce in our sample), with lower population densities and less healthcare infrastructure, rely more on home visits to meet client needs. Rural community health nurses face longer travel times, reducing the time available for in-office consultations. Regional differences also extend to organisational activities, which are discussed in detail in the administrative burden section below. Similar patterns have been observed in other regions, with geographic and socioeconomic factors significantly influencing healthcare utilisation and service delivery (Finkelstein, Gentzkow, and Williams, 2016; Godøy and Huitfeldt, 2020; Heggem, Gjøsund, Zahl-Thanem, and Brigham, 2023; Kovacevic, Behrens, and Hyll, 2024). These disparities highlight the importance of tailored staffing models that take both population density and geographic constraints into account.

4.2. Client age focus and missed prevention opportunities

While Austria's community health nursing initiative was primarily designed to serve older adults (75+) and their imminent or existing needs for care, our findings indicate that considerable shares of working time are also dedicated to those at retirement age (65–75), and even to the working population. This deviation from the initial focus of the pilot projects likely stems from the significant influence of local municipalities over the decentralised service implementation, leading to variations in which age groups received attention.

Still, the strong emphasis on older adults (with existing health issues) limits opportunities for prevention and early intervention in younger sub-populations, before health issues become manifest. Given the size of this group, working-age adults (18–65) receive comparatively little attention, and teenagers and children are virtually not served at all. This narrow age focus reduces the initiative's preventive potential, missing opportunities to improve long-term health outcomes and alleviate future care demands. Expanding service provision to include younger age groups could enhance the long-term impact of community health nursing in Austria.

4.3. Administrative burden

Our analyses show that organisational tasks (i.e., administration, project management and team meetings) require on average about as much time per working hour as client engagement (home visits, in-office consultations, reaching out to new clients and travelling).

Our findings align with those of Pichler et al. (2024) and Vaartio-Rajalin et al. (2020), as all studies demonstrate substantial time dedicated to non-client activities. In terms of specific percentages, Pichler et al. (2024) report that nearly 52 % of community health nurses' working time in Austria is dedicated to direct client interaction and outreach, while our study estimates this share at approximately 35 %. Similarly, Vaartio-Rajalin et al. (2020) found that Finnish nurses spent 50 % of their work shifts on indirect patient contact activities.

Two factors may explain these differences in percentages. First, our data were collected 15 months earlier than the study of Pichler et al. (2024), during the initial phase of the pilot projects, when more time was likely required to establish the service (e.g., project

management, networking and public relations). Second, variations in categorisation may have contributed to the discrepancies. Our study explicitly includes more non-client-facing categories, such as administration, project management, team meetings, networking, and public relations, while other studies may have incorporated these activities into broader organisational or indirectly client-related categories.

A high proportion of administrative and organisational tasks is not unique to community health nursing but is widely documented across nursing settings. Studies indicate that hospital nurses often spend no more than one-third of their working time with patients (Westbrook, Duffield, Li, and Creswick, 2011; Michel, Garcia Manjon, Pasquier, and Ortoleva Bucher, 2021; Antinaho, Kivinen, Turunen, and Partanen, 2015), with some evidence suggesting even lower proportions in certain settings (Bakhoum, et al., 2021). Michel et al. (2021) report that most nurse time is spent on communication, care coordination, and planning, while tasks such as quality and safety optimisation, staff supervision, and client education receive the least time. Notably, lean management practices can increase direct patient care time by up to 50 % (Koc and Alpar, 2025), comparable to the community health nurse settings discussed above (Vaartio-Rajalin, Näsman, and Fagerström, 2020).

An important insight from our study is that the 1:1 ratio between client engagement and administration masks significant variation based on agreed working hours, with administrative burden increasing substantially for nurses working longer: We modelled each activity's time share as having a baseline component (constant across working hours) plus a component that changes with weekly working hours.

For organisational tasks, we found statistically significant increases in time share per additional working hour for administration ($\beta = 0.0018$, $p = 0.048$) and project management ($\beta = 0.0019$, $p = 0.027$), coupled with statistically significant decreases in shares for team meetings ($\beta = -0.0026$, $p = 0.000$) and networking ($\beta = -0.0011$, $p = 0.021$). This means that (for weekly working hours up to 45 h) as nurses' working hours increase, the relative shares of administration and project management rise while shares allocated to team meetings and networking decreases. On the other hand, absolute time dedicated to administration and project management increases over this interval, while absolute time for team meetings and networking first increases then decreases with weekly working hours. Coefficients for client engagement activities remained non-significant, suggesting stable shares regardless of total working hours.

The practical implications are substantial: for nurses working 20 hours weekly, each additional hour includes approximately 12.4 minutes for administration and 8.0 minutes for project management (totalling 20.4 minutes or 34 % of the additional hour). At 40 hours, these figures rise to 16.7 and 12.5 minutes respectively (totalling 29.2 minutes or 49 % of the additional hour). This pattern again shows that administrative burden increases disproportionately with longer working hours, with full-time nurses dedicating nearly half of any additional working hour to administrative tasks. Time dedicated to team meetings increases progressively as weekly working hours rise to 29, but decreases beyond this threshold. Notably, nurses working 40 hours per week spend approximately the same amount of time in team meetings as those working only 20 hours.

These patterns suggests that nurses exceeding 29 weekly hours reallocate time from collaborative activities toward managing their expanding administrative responsibilities. These findings raise important questions about optimal working hour arrangements for nursing staff.

There is also some variation with respect to regions. While the overall administrative burden is consistent across regions, the composition varies: rural nurses spend up to 20 % of their time on paperwork and 10 % on project management, whereas in urban areas, the split is 16 % for administrative tasks and 13 % for project management. There is hardly any regional variation in the time dedicated to team meetings.

A significant portion of working time spent away from patients is attributed to documentation tasks, including patient charting, medication records, and care plan updates. A time-motion study found that nurses allocate approximately 25 % of their working hours to documentation, primarily electronic health records (Bakhoum, et al., 2021). Furthermore, a systematic review highlighted that with electronic health records, nurses frequently engage in dual documentation, informally recording data on paper before entering it into electronic systems, leading to redundancy and increased workload (Moore, Tolley, Bates, and Slight, 2020). Community health nurses have also reported organisational documentation (especially financial documentation) as a major workload factor (De Groot, De Veer, Munster, Francke, and Paans, 2022). These findings reinforce our study's evidence that administrative demands place a considerable burden on community health nurses, potentially affecting their ability to maximise direct patient care.

Our findings raise broader questions about optimising resource allocation in community health services. Although available data cannot definitively estimate the exact potential for efficiency gains, these results underscore the importance of considering both workload distribution and concrete improvement strategies. Potential approaches may include targeted deployment of administrative support personnel and gradual enhancement of digital documentation systems specifically designed for community health nursing.

While the administrative burden suggests digital tools could streamline reporting and maintain quality standards, their practical effectiveness in reducing workload remains uncertain. Furthermore, transitioning from paper records to electronic records may initially increase documentation time during early implementation phases (Baumann, Baker, and Elshaug, 2018; Joukes, Abu-Hanna, Cornet, and de Keizer, 2018).

Our regression analysis showing increasing administrative burden with working hours suggests that workforce planning models should carefully consider optimal working time arrangements to maximise efficiency. While our study provides an early snapshot of community health nursing activities, ongoing evaluation and structured data collection will be crucial for refining the efficiency and sustainability of a mature community health nursing service.

5. Limitations

This study is not primarily intended to be generalizable, but rather to reflect the work of a new service in one country, supported by

external funding. It reflects service patterns during the early implementation phase, which may not fully represent established service delivery. Still, results are meaningful also in a broader context, as comparison with findings from other countries with differing histories of community nursing services shows.

Our cross-sectional design does not allow to capture changes over time.

The study is based on a convenience sample of community health nurses working in Austrian pilot projects and data were gathered by an online survey. In particular, recall bias and self-selection bias cannot be ruled out. However, the sample characteristics closely align with those of the entire community health nurse population recently assessed by Pichler et al. (2024, pp. 110–116) supporting the validity of the findings.

6. Conclusions

Our analysis highlights key opportunities to improve the understanding of community health nursing service delivery in Austria. The balanced allocation of time between client engagement (e.g., preventive and non-preventive home visits, in-office consultations, outreach for new clients, and travel) and organisational tasks (e.g., administration, project management, and team meetings) suggests that targeted organisational support could enhance service delivery.

While administrative duties are indispensable to maintaining care quality, the available data do not allow us to pinpoint exactly how and to what extent these tasks might be streamlined to free up more client-facing time. Nonetheless, several approaches merit systematic evaluation in follow-up research.

For example, delegating selected non-clinical tasks (e.g., data entry, scheduling, routine documentation) to dedicated support staff could plausibly lessen nurses' administrative load. Likewise, tailored digital solutions might reduce redundant work, if they prove acceptable, interoperable, and cost-effective in real-world settings. Any such intervention would carry upfront costs (software, training, workflow redesign) that must be weighed in rigorous cost-benefit analyses.

Furthermore, structured quality-improvement methodologies (e.g., value stream mapping, root cause analysis) offer a means to map, measure, and eliminate non–value-adding steps. Future studies could help identify which combination of organizational changes, digital tools, and process-improvement techniques actually delivers the largest net gain in direct client time.

Geographic variations in service provision underscore the need for tailored implementation strategies, where workforce planning and activity distribution are customised to the specific needs of each nurse's catchment area. In rural regions, extended travel times and administrative demands reduce the time available for client interactions. Additionally, further studies should investigate how demographic characteristics of catchment areas influence community health nursing workload and whether tailored staffing models can address regional differences.

As the community health nursing system continues to evolve, ongoing research will be vital in unlocking the full potential of community health nursing, ultimately driving more efficient and equitable healthcare delivery for all.

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Data availability

Due to the protection of data privacy, the data are available only for nonprofit research in agreement with the authors, according to the consent given by participants.

CRediT authorship contribution statement

Raimund M. Kovacevic: Writing – original draft, Validation, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Doris A. Behrens:** Writing – original draft, Visualization, Validation, Conceptualization. **Walter Hyll:** Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

None

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