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Nurses' assessments of horizontal collaboration in municipal health and care services for older adults: A cross-sectional study

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Abstract

Interprofessional and interorganizational collaboration is considered key to achieving high-quality care and positive patient outcomes, but there is limited research into how nurses working in nursing homes and home care services perceive collaboration with other municipal health and care service providers and how their assessments of collaboration vary with individual characteristics and context. The objective of this study was to map variation in nurses' assessments of horizontal collaboration with core care services for older adults, specifically nursing homes, home care services, general practitioners, the allocation office and physio- and occupational therapy services. The study draws on findings from a nationwide cross-sectional survey on posthospital care for older adults, conducted among nurses working in nursing homes and home care services in Norway ($N = 3717$). Nurses were asked to assess collaboration with these five services. Independent variables were workplace, age, years at current workplace, part-time work, postgraduate education, and municipality size. Statistical analyses were conducted using descriptive statistics and analysis of variance (ANOVA). A majority of nurses evaluated horizontal collaboration as good. Collaboration with the home care services was evaluated as best, while collaboration with general practitioners was evaluated as least good. The study showed that workplace and municipality size were important for nurses' assessments of collaboration. Generally, nurses in smaller municipalities evaluated collaboration as better than nurses in larger municipalities. That workplace and municipality size impact on nurses' evaluations of collaboration in municipal care services for older adults is important knowledge for leaders and policy-makers aiming to improve patient care and teamwork.

KEYWORDS
cooperation, long-term care, municipalities, Norway

1 | INTRODUCTION

Collaboration between different healthcare services and professionals has been the focus of much scholarly attention in the last decades because of its impact on healthcare delivery and quality outcomes. In particular, there has been much focus on interprofessional collaboration within healthcare organizations (Costa et al., 2014; Karam et al., 2018; Sangaleti et al., 2017) and vertical collaboration between the specialist and municipal healthcare services (Christensen, 2016; Hellesø & Gautun, 2018; Olsen et al., 2013).

Conversely, there is limited research into interorganizational collaboration in municipal health and care services for older adults (Karam et al., 2018; Kassah & Tønnessen, 2016), which typically comprise of general practitioner and long-term care services. Recent reforms and new models in European healthcare systems have transferred medical and caring tasks from specialist health services to municipal and primary care (Bienkowska-Gibbs et al., 2015). The consequences of these developments are increased specialization and diversification of the municipal care services and a greater need for information exchange and collaboration between different municipal healthcare providers to deliver coherent patient care (Rostad et al., 2020; Van Eenoo et al., 2018; Veenstra et al., 2020).

A further consequence of the shifting of responsibilities from hospitals to municipal care is increased responsibilities for nurses working in institutional and home care for a higher number of older adults with complex care needs (Gautun & Syse, 2017). Indeed, the shift toward more complex patients and specialized services entails an increased need for horizontal coordination, for which nurses play an increasingly important role. In fact, care coordination has been identified as one of the core areas of nursing expertise (Allen, 2004, 2014; Melby et al., 2018). Nurses are key actors in the health system, supporting and sustaining the delivery, networks and organization of health and care services (Allen, 2014). Allen's (2019) concept of "organizing work" refers to the "everyday elements of nursing practice concerned with the coordination and organization of patient care" in the health and social care system. Several studies underpin that nurses in both the hospital and municipal setting play key roles in facilitating collaboration and coordination of care among different (interdependent) actors in the healthcare services (Allen, 2014, 2019; Kise Hjertstrøm et al., 2018; Melby et al., 2018).

Considering the pivotal role of nurses in Norway and elsewhere, knowledge about their assessments of horizontal collaboration has the potential to improve coordination and outcomes across service settings. More knowledge is needed about how nurses in nursing homes and home care services perceive collaboration with other core service providers in the municipal health and care sector and how their assessments of collaboration vary with individual characteristics and across contexts. In this article, we use the term "horizontal collaboration" as a general term to denote collaborative relationships within a single organizational level of care, such as the municipal health and care services (Veenstra et al., 2020). Furthermore, we hypothesize that nurses working in different settings perceive collaboration with other service providers differently due to varying information needs, interdependencies, and expectations of collaboration (Hellesø & Fagermoen, 2010), and that municipality size influences how nurses assess collaboration, due to higher structural complexity of services in larger municipalities (Veenstra et al., 2020). In addition to the care setting, assessments of collaboration may also be affected by nurses' individual characteristics. We expect nurses with longer experience, higher formal competence and a higher work presence to have a better overview of how the municipal care system works and thus to be better skilled at collaboration with core actors in the system. This, in turn, may give more positive assessments of collaborative relationships.

The objective of the article is to map variation in nurses' assessments of horizontal collaboration with core municipal health and care services for older adults in Norway. The structure of the Norwegian municipal health and care service system offers a unique opportunity to compare nurse assessments across service settings and municipal contexts. Drawing on findings from a nationwide cross-sectional survey on posthospital care for older adults, we aim to answer the following two research questions: (1) How do municipal nurses assess the quality of collaboration with the following core municipal services: the resource allocation office, general practitioners, physio- and occupational therapy services, home care services and nursing homes in their municipality?; and (2) How do their assessments vary with place of work, defined by the type of service (home care/long-term institutional care/short-term units), municipality size, and individual nurse characteristics?

2 | BACKGROUND

In Norway, municipal health and care services for older adults comprise of medical services (general practitioners and out-of-hours medical services), physio- and occupational therapy services and long-term care services. The latter are typically divided into institutional and home care. The overall goal of these services is to contribute to improved self-reliance, health and quality of life–or dignified decline and death (Centre for Care Research, 2015; Førland et al., 2018). The general tendency in Norwegian healthcare policy in the last two decades has been focus on quality improvements, coordination and continuity of care, and decentralization of services (Ministry of Health and Care Services, 2006, 2009, 2013, 2018). Recent national reforms such as the Coordination Reform have contributed to many (especially larger) municipalities providing care in specialized short-term units and home care teams for specific user groups (Sogstad et al., 2020) and an increasing diversification of the workforce, with more nurses pursuing postgraduate education and the growing presence of professional groups such as physio- and occupational therapists in the sector (Statistics Norway, 2018). The increase in specialization and diversification in municipal services entails that many older adults have to transfer between different municipal care services to get the help they need (Rostad et al., 2021). Care transitions necessitate effective information exchange, collaboration and coordination across municipal services and settings to maintain continuity and patient safety (Grimsmo, 2013; Rostad et al., 2021). National healthcare policy has been increasingly concerned with continuity of care within and across the municipal care services (Ministry of Health and Care Services, 2009, 2013, 2018). As Haggerty et al. (2003, p. 1221) pointed out, the experience of continuity of care for providers relates to the "perception that they have sufficient knowledge and information about a patient to best apply their professional competence and the confidence that their care inputs will be recognized and pursued by other providers."

Effective collaboration between providers is particularly important for informational continuity and management continuity to be achieved, so that patients (and their families) feel that providers know their medical (health) history, past episodes, and interventions and that different providers agree on a management plan (Haggerty et al., 2003).

Nurses in municipal care play a key role in coordinating service users' care trajectories (Allen, 2019; Kristoffersen, 2016). Some municipalities have specific nurse care coordinator roles with responsibilities for coordinating services for specific user groups (Syse & Moshina, 2015), but generally, all nurses in the Norwegian municipal system have a responsibility for coordinating care across services and service levels, both in institutions and in the home, and to facilitate collaboration with other professional groups (Kristoffersen, 2016). Municipal nurses' perceptions of how well different services in municipal care work together are an important indicator of intra-municipal continuity of care and thus have important implications for quality outcomes and the patient experience.

Institutional care can be divided into long-term institutional care (nursing homes) and short-term institutional care. Short-term units offer time-limited stays and can have different aims and foci, such as examination and treatment, rehabilitation, respite care or other (Kaurin & Lossius, 2012). In Norway, short-term units are variably located in nursing homes, local medical centers or designated short-term care institutions, depending on the size of the municipality and the organization of services (Skinner, 2015; Tingvold & Romøren, 2015). Inpatient acute care, intermediate/respite care, palliative care, and rehabilitation are the most common short-term specializations (Sogstad et al., 2020; Tjerbo & Skinner, 2016), and large municipalities are more likely to have a diverse range of short-term services (Sogstad et al., 2020). In this article, we use the term "nursing home" to denote long-term institutional care and "short-term units" to denote short-term institutional care.

The home care services, on the other hand, provide home care and/or social care to service recipients living at home or in sheltered housing. The home care services are primarily targeted at assistance with activities of daily living (basic self-care tasks such as eating, dressing, and toileting), but due to recent developments in the care services, home care nurses are increasingly also carrying out medical tasks (Gautun & Syse, 2017). In small municipalities, there is often only one home care unit, while there may be several units or "zones" in larger municipalities. We use the term "home care" to denote the institutional affiliation of nurses working in home nursing and/or home care services.

Whereas nurses conduct the executive tasks within the long-term care services, the administrative authority lies with the municipality's allocation office or *purchaser authority* (Gjerde et al., 2016). All municipalities do not have a specific allocation *office*, but they all have an authority that is responsible for resource and service allocation from different municipal healthcare providers (Gjerde et al., 2016). For purposes of simplification, we will use the term "allocation office" to denote this entity or function. Nurses from all parts of the long-term care services must collaborate with the allocation office when they receive new users or there are changes in users' circumstances and/or needs. Nurses are at liberty to request a new decision on resource allocation for any given user, but it is ultimately up to the allocation office to evaluate user needs and decide what type and amount of services should be provided. Former research has shown that home care nurses have limited ability to affect the allocation of care services or to change allocation decisions (Kassah & Tønnessen, 2016).

Other core municipal health and care services for older adults are the general practitioner services and physio- and occupational therapy services. The medical authority of home care users lies with the general practitioner, but for users in institutional care, the nursing home physician takes over medical care during the stay (Kværner, 2005). From 2018, all municipalities were required by law to have their own physiotherapy service, and from 2020, occupational therapy services were statutory (Municipal Health and Care Services Act, 2012).

In sum, institutional care, home care, the allocation office, general practitioners and physio- and occupational therapy services constitute the five core municipal services for older adults in the municipal health and care service system. Nurses in institutional and home care are required to collaborate with all these services and coordinate care offered by the different professional groups across settings and service levels (Kristoffersen, 2016). While municipal nurses primarily exchange information and communicate with the allocation office and other healthcare providers in the municipality by means of the shared electronic patient record (EPR) and direct (face-to-face or telephone) contact (Sogstad & Skinner, 2020), general practitioners have a separate EPR system and communicate with the nurses via e-messages (and direct contact) (Lyngstad et al., 2014). Collaboration between nurses in home care and institutional care revolves primarily around transfers of patients across the two settings, transfers that are usually planned and prepared for over time (Sogstad & Skinner, 2020).

The complexity of the intra-municipal collaborative context is often much higher in larger than smaller municipalities. In small municipalities, there is often only one nursing home (including both short- and long-term institutional care), one home care unit, one physio- and occupational therapy service and one general practitioner surgery, and the services are commonly located geographically close to each other. In large municipalities, however, there are several nursing homes in different geographical locations and with different specializations, several home care units (or "zones") and numerous general practitioner surgeries.

3 | METHODS

To investigate nurses' assessments of intra-municipal collaboration, we used data from a nationwide cross-sectional survey on post-hospital care for older adults, that was conducted among nurses working in municipal care services in Norway. The data were collected in 2017. Only nursing staff working in the municipal care

services (home care, long-, or short-term institutional care or other municipal services receiving older patients from hospital) and who were involved in the posthospital care of older adults (65 years and older) were included in the survey. There is no national register of nurses fitting our inclusion criteria, but the majority of Norwegian nurses are members of the Norwegian Nurses' Organization (*Norsk Sykepleierforbund*). The Norwegian Nurses' Organization provided access to the e-mail addresses of all 20,714 members. However, the member lists did not contain information about the nurses' workplace and also included those who did not or no longer worked as a nurse in municipal care, but for example worked in hospitals or in administrative occupations. Hence, there is no way of knowing how many of the 20,714 members were in our target group (i.e., nurses working in the municipalities), which makes it impossible to calculate a valid response rate for our study. Initial contact was made by sending all member nurses an e-mail with information about the study and a link to an electronic questionnaire. The e-mail provided information about the aim of the study and participants' rights and invited the target group to participate: "If you are a nurse working in the home care and/or nursing home services, we would like to hear about your experiences of transferring older patients from hospital to the service where you work." The survey included additional screening questions about the respondent's workplace and whether the workplace provided services to older adults. Nurses who did not fulfil these inclusion criteria were filtered out of the survey. Three reminders were sent out: 1, 2, and 3 weeks after the initial e-mail contact. A total of 5884 nurses working in municipal care services responded to the questionnaire. A total of 5400 nurses specified in which part of the care services they worked and confirmed that their workplace received older patients.

3.1 | The questionnaire

The questionnaire built on questions tested in previous data collections on discharge planning (Gautun & Syse, 2017; Hellesø et al., 2005). A first set of screening questions asked about the respondents' workplace and care setting. The main part of the questionnaire contained 15 questions about vertical coordination of services for older patients following hospital discharge and five questions about horizontal (intra-municipal) coordination. The questionnaire finished with a set of background questions about gender, age (age-group), part-time work, work experience, and postgraduate education. The median time it took to complete the questionnaire was 15 min.

3.2 | Sampling

For this study, we selected respondents who worked in home nursing *or* institutional care, had indicated that their workplace received older adults (65 years and older) and had specified in which municipality they worked. Nurses working in both home care and institutional care were excluded from the analysis. The resulting sample equaled 3717 nurses of whom 1766 worked in home care services, 1510 in nursing homes, and 441 in short-term units. The majority were women (95%). In January 2017, Norway had 426 municipalities. Of these, 358 (84%) were represented in the sample of nurses used in the current article. The smallest municipality represented in our study had 807 inhabitants (in 2017), the largest municipality (the capital Oslo) had 673,468 inhabitants. The number of responding nurses within each municipality ranged from 1 to 189.

3.3 | Dependent variables

To assess nurses' experiences with intra-municipal coordination of care services for older adults, we used five items asking about nurses' assessments of collaboration with core municipal healthcare services, measured in the following manner: *Overall, how would you rate the collaboration with the following services in your municipality?* (1) the resource allocation office; (2) physio- and occupational therapy services; (3) general practitioners; (4) nursing home(s)/institutional care, and (5) the home care service. Responses for each of the five services were given on a five-point Likert-type scale, ranging from 1 (very good) to 5 (very poor). The response categories were recoded so that higher scores indicated more positive ratings. Some respondents answered "I do not collaborate with these services," and there were some cases with missing data. Overall, 6.5% of respondents reported that they did not collaborate with a resource allocation office, and 0.9% had data missing on the variable. For the physio- and occupational therapy services variable, 1.3% of the sample signaled that they did not collaborate, and 1.3% had data missing. For the general practitioner variable, 4% indicated that they had no collaboration, and 0.4% had missing data. In addition, 2.7% of home care nurses reported that they did not collaborate with nursing homes, and 1% lacked data. And finally, 3% of nurses working in institutional care indicated that they did not collaborate with the home care service, and 0.9% had missing data. These cases were left out of the respective analyses. Moreover, home care nurses were excluded from the analysis of assessments of collaboration with home care services, and nurses working in institutional care (nursing homes and short-term units) were excluded from the analysis of assessments of collaboration with nursing homes.

3.4 | Independent variables

Workplace (institutional affiliation) was divided into three categories: (1) home care, (2) nursing home (long-term institutional care), and (3) short-term units. Data on municipality size were derived from the national administrative database for Municipality-State-Reporting, KOSTRA, provided by Statistics Norway. We used population data from 2017, which corresponds with the year our survey was conducted. In addition, survey data provided the following individual characteristics

of nurses: age, employment length, part-time work, and level of postgraduate education. Part-time work was defined as less than 36 h per week. The level of postgraduate education was measured as an ordinal variable with three categories: (1) no postgraduate education, (2) 1 year or less, (3) more than 1 year/Master's degree.

3.5 | Statistical analysis

We used χ^2 statistics (crosstabs), one-way analysis of variance (ANOVA) comparison of means and Tamhane procedure for multiple comparison to describe the data and variation across workplace groups (home care nursing/nursing home/short-term unit). We conducted ANOVA as well as multilevel analyses (Snijders & Bosker, 1999) to map variation across workplace groups, municipality size and individual nurse characteristics. Multilevel analyses were conducted to check for possible clustering of nurses' responses within municipalities. The intraclass correlation coefficient (nurses clustered within municipalities) varied between 0.10 and 0.15 for the five dependent variables. Multilevel analyses produced similar results and conclusions as the ANOVA analyses, and we therefore only present the results from the ANOVA analysis (multilevel results are available upon request). To assess whether the effect of workplace was different for smaller versus larger municipalities, we also conducted ANOVA with interaction effects between workplace group and municipality size. The software used was IBM SPSS Statistics version 26.

3.6 | Ethics approval and informed consent

Ethical approval for the survey was granted by the Norwegian Centre for Research Data (NSD), reference number 53155. Written information about the aim of the study, the confidentiality of the data handling and the voluntary nature of participation was provided to participants in the electronic invitation to participate in the study. Informed consent was obtained through the return of the questionnaire. Respondents were guaranteed anonymity.

4 | RESULTS

4.1 | Sample characteristics

Table 1 gives an overview of the sample characteristics of the 3717 nurses in the study and how they vary across workplace groups (institutional affiliation). Almost half of the participants were younger than 40 years, had a postgraduate qualification (49%), and 47% had been working 5 years or less at their current workplace. Participants working in home care and short-term units were younger than participants working in long-term institutional care, and participants working in short-term units had been working at their current workplace for a shorter time compared with participants in home care and long-term institutional care.

Working part-time was common among our participants, with nearly half of the nurses indicating that they worked less than 36 h per week. Part-time work was less common among participants in home care than in institutional care. Half of the nurses had postgraduate education, but it was less common among participants in home care to have a postgraduate qualification than nurses in institutional care.

4.2 | Assessments of collaboration

Figure 1 shows the distribution of nurses' responses on the five single items measuring assessments of collaboration. The share of nurses reporting that collaboration was "very good" or "fairly good" was highest for collaboration with the home care services (74.5%) and nursing homes (67.2%), followed by the physio- and occupational therapy services (64.1%), allocation office (60.6%), and general practitioners (59.7%).

Table 2 provides an overview of the mean scores for the items measuring assessments of collaboration. Mean differences across workplace groups were statistically significant for three of four items ($p < 0.01$). Nursing home nurses did not differ from nurses in short-term units in their assessments of collaboration with home care services. Post hoc pairwise comparisons indicated that nurses working in nursing homes rated collaboration with the allocation office significantly lower than both nurses working in home care ($p = 0.026$) and short-term units ($p = 0.018$). For collaboration with the physio- and occupational therapy services, all pairwise differences were significant ($p \leq 0.001$), with nurses working in short-term units having the most positive ratings. Nurses working in short-term units rated collaboration with general practitioners significantly lower than home care nurses and nurses in long-term institutional care ($p \leq 0.001$).

4.3 | ANOVA

ANOVA were conducted to describe the multivariate associations of nurses' assessments of collaboration with workplace groups (institutional affiliation), individual characteristics and municipality size. Table 3 displays the results for the five models. Differences across workplace groups remained statistically significant also in the full models. Furthermore, the multivariate findings (Model E) suggested that nursing home nurses rated collaboration with home care services significantly lower than nurses working in short-term units (ß = −0.14, $p < 0.01$).

The full models explained between 3% and 7% of the total variance in ratings of collaboration. Individual nurse characteristics indicating experience and skill contributed only weakly, and the statistically significant associations of higher education with perceived collaboration with physiotherapists and general practitioners were the opposite of what we expected. Working part-time was relatively strongly associated to more negative assessments of collaboration with the allocation office (Model A: ß = −0.12; $p < 0.001$), but not with any other core actors. Alternative

TABLE 1 Sample descriptives nurses (*N* = 3717) in relation to workplace in the municipal care services

Workplace	Home care *N* = 1766, *N* (%)	Nursing home *N* = 1510, *N* (%)	Short-term unit *N* = 441, *N* (%)	Total *N* = 3717, *N* (%)
Age-group***				
40 years and younger	869 (49.5)	670 (44.6)	218 (49.5)	1757 (47.5)
41–50 years	468 (26.7)	378 (25.2)	115 (26.1)	961 (26.0)
51 years and older	418 (23.8)	453 (30.2)	107 (24.3)	978 (26.5)
Missing (*N*)	11	9	1	21
Number of years at current workplace***				
0–2 years	339 (19.3)	328 (21.9)	127 (28.8)	794 (21.5)
3–5 years	444 (25.3)	374 (24.9)	124 (28.1)	942 (25.5)
6–10 years	473 (26.9)	361 (24.1)	100 (22.7)	934 (25.3)
11–15 years	225 (12.8)	191 (12.7)	46 (10.4)	462 (12.5)
16–20 years	168 (9.6)	139 (9.3)	28 (6.3)	335 (9.1)
> 20 years	108 (6.1)	108 (7.2)	16 (3.6)	232 (6.3)
Missing (*N*)	9	9	0	18
Working part-time (yes)**	795 (45.5)	764 (51.0)	229 (52.2)	1788 (48.5)
Missing (*N*)	17	12	2	31
Postgraduate education**				
No	936 (53.4)	734 (49.1)	200 (46.1)	1870 (50.8)
Yes–1 year or less	479 (27.3)	399 (26.7)	123 (28.3)	1001 (27.2)
Yes–more than 1 year/ Master's degree	337 (19.2)	362 (24.2)	111 (25.6)	810 (22.0)
Missing (*N*)	14	15	7	36
Municipality size***				
<5000	258 (14.6)	263 (17.4)	29 (6.6)	550 (14.8)
5000–9999	239 (13.5)	221 (14.6)	53 (12.0)	513 (13.8)
10,000–19,999	291 (16.5)	208 (13.8)	73 (16.6)	572 (15.4)
20,000–49,999	422 (23.9)	359 (23.8)	139 (31.5)	920 (24.8)
≥50,000	556 (31.5)	459 (30.4)	147 (33.3)	1162 (31.3)

Tests of statistical significance across workplace groups.
**$p < 0.01$; ***$p < 0.001$.

models without workplace and municipality size only explained between 0.2% and 1.5%, indicating that workplace and municipality size were the most important explanatory variables. For all models, the findings indicated that ratings were significantly lower in larger compared with smaller municipalities.

For Models A, B, C, and E we also included interaction effects of workplace group with municipality size, to assess whether the effect of workplace was different for smaller versus larger municipalities. The interaction effect for Model E was not statistically significant. However, Models A–C had significant interaction effects; here, the effect of workplace differed across municipality size. The interaction effects are illustrated in Figure 2 (see also Table S4 in the Supporting Information Material). Nurses working in home care services had, on average, more negative assessments of collaboration with the allocation office compared with nurses working in short-term units. However, differences between these workplaces were significantly smaller in larger (≥ 20,000 inhabitants) municipalities. In other words, the negative association between collaboration with the allocation office and municipality size was less strong for home care nurses than nurses working in short-term units. Similarly, nurses working in the home care services had, on average, more negative assessments of collaboration with the physio- and occupational therapy services compared with nurses working in short-term units. However, differences between these workplaces were significantly smaller in larger (≥ 20,000 inhabitants) municipalities. Put differently, the negative association between collaboration with physio- and occupational therapy services and municipality size was less strong for home care nurses than nurses working in short-term units. In small municipalities (< 5000 inhabitants), there were no differences in nurses' assessments of collaboration with general practitioners across workplace groups. In larger municipalities (≥ 20,000 inhabitants) home care nurses tended to have more positive assessments compared with nurses in short-term units.

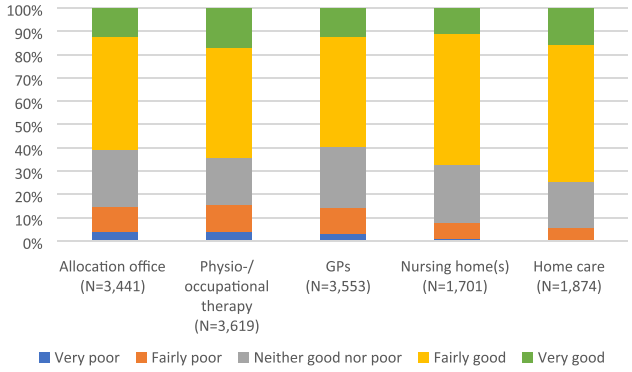

FIGURE 1 Response distribution on the five items of intra-municipal collaboration (rated on a 5-point scale: %) [Color figure can be viewed at wileyonlinelibrary.com]

5 | DISCUSSION

Findings from our study showed that the majority of municipal nurses assessed horizontal collaboration with all five actors as good, with the highest ratings for collaboration with institutional and home care nurses and the lowest ratings for collaboration with general practitioners. Nurses' assessments of horizontal collaboration varied across workplace group and municipality size. As municipal nurses have a pivotal role in organizing and coordinating care trajectories and managing collaborative relationships, their assessments on horizontal collaboration, and the variation therein, provide important input in ensuring effective pathways and continuity of municipal care for older people.

One possible explanation for the positive assessments of home care nurses on collaboration with nurses in institutional care and of nurses in institutional care on collaborating with home care is related to a common professional (nursing) identity. Sharing the same profession, they are also likely to share attitudes, values, knowledge, beliefs, and skills (Matthews et al., 2019), which make it easier to collaborate, simplifies communication, counters misunderstandings of each other's roles, and fosters trust and respect (Johannessen & Steihaug, 2014; Steihaug et al., 2016). Conversely, the reverse mechanisms may explain the nurses' more negative assessments of collaboration with general practitioners. Previous research has described the collaborative relationship between nurses and physicians as strained, stemming from "differences in their education, socioeconomic status, and professional duties, privileges, and responsibilities" (Yildirim et al., 2005, p. 430). In addition, collaboration between nurses and general practitioners in Norway is impeded by the separate systems for patient information (Lyngstad et al., 2014) and different financing structures. Most general practices are privately owned, independent businesses, and general practitioners commonly have high workloads and tight schedules of patient consultations (Texmon, 2018). Thus, the structural differences between long-term care services and general practices may inhibit direct and timely contact between nurses and general practitioners.

5.1 | Variations across workplace groups

Compared with nurses working in home care and nursing homes, nurses working in short-term units had the most positive assessments of collaboration with the allocation office and the physio- and occupational therapy services. Short-term units typically have higher turnover of patients than in other parts of the long-term care services and are thus likely to be more interdependent with other municipal services, including the allocation office. Nurses working in

TABLE 2 Nurses' assessments of intra-municipal collaboration with core municipal services

Workplace	Home care Mean (*SD*)	Nursing home Mean (*SD*)	Short-term unit[a] Mean (*SD*)	Total Mean (*SD*)
Assessment of collaboration (scale 1 "very poor"-5 "very good")				
Allocation office (*N* = 3441)**	3.57 (0.98)	3.48 (0.97)	3.63 (0.98)	3.54 (0.98)
Physio-/occupational therapists (*N* = 3619)***	3.68 (0.93)	3.43 (1.12)	4.01 (0.90)	3.62 (1.02)
General practitioners (*N* = 3553)***	3.62 (0.88)	3.56 (0.99)	3.20 (0.99)	3.54 (0.95)
Nursing home(s) (*N* = 1701)	3.70 (0.78)	–	–	3.70 (0.78)
Home care services (*N* = 1874)	–	3.83 (0.77)	3.90 (0.76)	3.84 (0.77)

Note: Means and standard deviations (*SD*) across workplace groups.

[a]Short-term units include all institutional/nursing home services offering time-limited stays for various purposes (e.g., examination and treatment, rehabilitation, palliative or respite care).

Tests of statistical significance across workplace groups.

**$p < 0.01$; ***$p < 0.001$.

TABLE 3 Results from the analysis of variance (ANOVA)

	Model A Allocation office, ß(SE)	Model B Physio-/ occupational therapists, ß(SE)	Model C General practitioners, ß(SE)	Model D Nursing homes, ß(SE)	Model E Home care services, ß(SE)
Intercept	3.99 (0.08)	4.43 (0.08)	3.64 (0.07)	4.09 (0.06)	4.39 (0.07)
Workplace group					
Home care	−0.08 (0.05)	−0.35 (0.05)***	0.38 (0.05)***	NA	NA
Nursing home	−0.19 (0.06)***	−0.63 (0.06)***	0.29 (0.05)***	NA	−0.14 (0.04)**
Short-term unit	ref	ref	ref	NA	ref
Age	0.04 (0.02)	0.02 (0.02)	0.04 (0.02)*	0.04 (0.03)	0.01 (0.02)
Years at current workplace	0.03 (0.01)*	0.01 (0.01)	0.03 (0.01)*	0.04 (0.02)	0.01 (0.01)
Working part-time (yes)	−0.12 (0.03)***	0.04 (0.03)	0.06 (0.03)	−0.05 (0.04)	−0.02 (0.04)
Education (0–2)	−0.01 (0.02)	−0.05 (0.02)*	−0.06 (0.02)**	−0.01 (0.03)	0.01 (0.02)
Municipality size (1–5)	−0.10 (0.01)***	−0.12 (0.01)***	−0.13 (0.01)***	−0.13 (0.01)***	−0.14 (0.01)***
Adjusted R^2	0.031	0.061	0.069	0.074	0.066

Tests of statistical significance.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

short-term units are more likely to have physicians' reports or interprofessional evaluations to lean on to influence allocation decisions, which may contribute to more positive evaluations of collaboration. Conversely, previous research shows that nurses in *home care* experience limited ability to influence allocation decisions and that the formal execution of power limits communication between the actors (Kassah & Tønnessen, 2016). This may explain home care nurses' lower ratings of collaboration with the allocation office.

As short-term units often specialize in rehabilitation and intermediate care, nurses in short-term units tend to have better access to physio- and occupational therapy services than nurses in other parts of the municipal care services and more experience with interprofessional collaboration. Nurses in short-term units may have succeeded in these horizontal and interprofessional collaborations by developing relationships and trust over time (Steihaug et al., 2016; Tsasis et al., 2012). Moreover, Birkeland (2014) pointed out that home care nursing in particular has traditionally been a domain in which nurses enjoy a large degree of professional autonomy, and that for home care nurses, collaborating with physio- and occupational therapists entails a completely different way of organizing, performing, and thinking about care. Notwithstanding, the increasing presence of physio- and occupational therapists in the home care services might be part of the explanation to why home care nurses assess collaboration with physio- and occupational therapy services more positively than nurses in nursing homes.

Nurses working in short-term units had the least favorable assessments of collaboration with general practitioners, compared with home care nurses and nursing working in nursing homes. A possible explanation is that short-term units typically receive more complex patients than nursing homes and home care, and thus to a larger degree rely on general practitioners for timely information about patients' health status, medication, and treatment. It is also worth mentioning that compared with the short-term units and home care settings, nurses in nursing homes have little collaboration with general practitioners except at admission and discharge, as they collaborate with the nursing home physician on medical treatment and care for patients in long-term institutional care (Ranhoff et al., 2007).

5.2 | Variations across municipalities

Nurses working in smaller municipalities had more positive assessments of horizontal collaboration with all five core actors compared with nurses working in larger municipalities. This finding is in line with results from another study, which revealed that smaller municipalities had better informational continuity than larger municipalities (Veenstra et al., 2020). The more complex care systems in larger municipalities, which generally consist of multiple care providers and general practitioners, make information exchange and collaboration more intricate ventures (Veenstra et al., 2020). Contrarily, less populous municipalities commonly have high transparency and short geographical distance between services (or their headquarters), which can enhance and facilitate intra-municipal information exchange and collaboration. Our study also showed that the

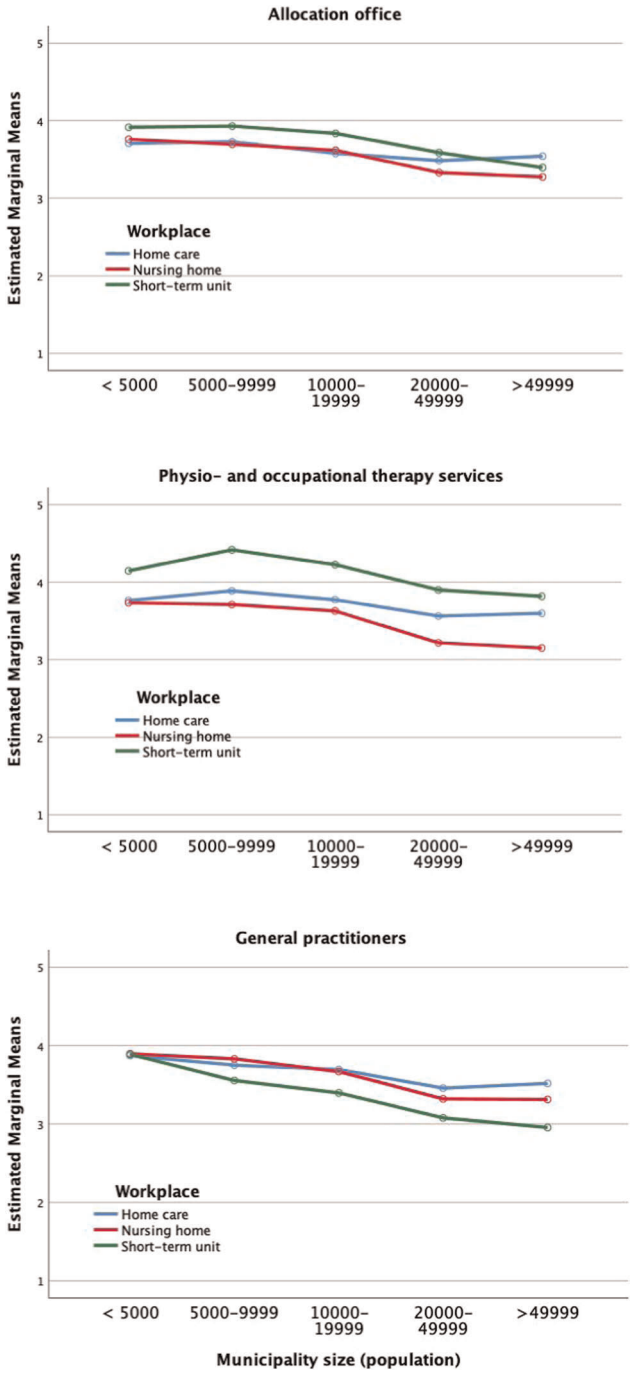

FIGURE 2 Estimated marginal means of collaboration with allocation office, physio-/occupational therapy services and general practitioners, across work place group and municipality size, adjusted for age, number of years at current workplace, working part-time, and postgraduate education [Color figure can be viewed at wileyonlinelibrary.com]

importance of workplace for horizontal collaboration differed across municipality size, which underlines the relevance of considering municipality context in improving continuity of care for older people. For example, in small municipalities, we found no workplace variations in nurses' assessments of collaboration with general practitioners. One possible explanation is the higher transparency of small municipalities and its possible positive impact on the nurses' organizational work. Nurses are likely to find it easier to collect, correct, update, filter, and translate required information about patients (Sogstad & Skinner, 2020) in a small municipality than in a larger one (Veenstra et al., 2020).

5.3 | Strengths and limitations

Our study is the first nation-wide survey of municipal nurses' perceptions of horizontal collaboration in the Norwegian municipal health and care services. It provides new information on variations in nurses' assessments of collaboration with core actors. The inclusion of a large number of nurses from different demographical, geographical, and professional settings strengthens the representativeness of the results. This is important, as information on the exact number of eligible nurses working in municipal care services was not available. We were therefore not able to calculate response rates and assess possible sampling bias.

A limitation of our study is that the survey did not ask about participants' assessments of collaboration with nursing home physicians or out-of-hours medical services. Nursing home physicians commonly take over medical care for users in institutional care, and the out-of-hours medical services is the first port of call for nurses seeking medical help for home care users outside normal working hours, but our study does not provide insights into nurses' perceptions of these collaborative relationships in the municipal health and care services. Another limitation is that participants were asked about their perceptions of collaboration with physio- and occupational therapy services combined. Thus, participants were forced to consider their collaboration with the two services together, instead of individually. It is possible that we may have missed out any differences in assessments between the two services, or that participants may have provided an assessment of just one of the services. Additionally, it is important to note that physio- or occupational therapy services were not statutory in 2017, when our study was conducted. Our findings indicated weak associations of nurses' individual characteristics, workplace, and municipality size with assessments of collaboration. Future research could benefit from more extensive batteries of questions mapping assessments of horizontal collaboration in municipal healthcare services for older people.

6 | CONCLUSION

The findings of the study highlight the importance of examining municipal nurses' perspectives on horizontal collaboration between core municipal actors. The variations in assessments across workplace groups and municipality size illustrate potentials for improving horizontal collaboration across professional identities, in particular between nurses and general practitioners, to ensure the continuity of care that is especially crucial for older people. The ultimate purpose

of successful collaboration is the provision of high-quality care, including continuity of care. Future developments in horizontal collaborations in long-term care are likely to be increasingly multidisciplinary and new integrative models for collaboration are needed. A central theme arising from our findings that warrants further research is the relationship between frequency and type of communication and the quality of collaboration. Other important avenues for future research are studies of the relationship between (perceptions of) horizontal collaboration and measures of patient reported and clinical outcomes.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

DATA AVAILABILITY STATEMENT

Access to the data has been granted to the project's investigators for a designated period, after which anonymised data will be made available for research purposes through the archives at the Norwegian Centre for Research Data (NSD).

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SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

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