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Workforce issues in home- and community-based long-term care in Germany

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Abstract

The study addresses staffing and workforce issues for home- and community-based long-term care in Germany. It is based on a study aimed at developing staffing recommendations for home-care provider organisations. The study was commissioned within the regulation of the German long-term care act. Following an exploratory literature search on staffing issues in home- and community-based care qualitative interviews with 30 experts in home care were conducted. In addition, time needed for different interventions in homes of people in need of care (n = 129) was measured. Ethical approval for the study was obtained. The literature on the topic is limited. In Germany, no fixed staff-to-client ratio exists, but staffing is determined primarily by reimbursement policies, not by care recipients' needs. The results of the interviews indicated that staffing ratios are not the main concern of home-care providers. Experts stressed that general availability of staff with different qualification levels and the problems of existing regulation on services and their reimbursement are of higher concern. The measurement of time needed for selected interventions reveals the huge heterogeneity of home-care service delivery and the difficulty of using a task-based approach to determine staffing levels. Overall, the study shows that currently demand for home-care exceeds supply. Staff shortage puts a risk to home care in Germany. Existing approaches of reimbursement-driven determination of staffing levels have not been sufficient. A new balance between staffing, needs and reimbursement policies needs to be developed.

KEYWORDS

home-care nursing, home-care services, long-term care policies, staffing levels

1 | INTRODUCTION

In 1995 Germany introduced a long-term care (LTC) insurance as part of its social security system. Ever since the number of beneficiaries is growing as is the number of nurses and other professionals. According to this, the number of people in need of long-term care has risen by 69.4% from 2,016,091 in 1991 to 3,414,378 in 2017. The number of home-care employees, mainly nurses, in the same period has more than doubled, but remained unchanged in terms of full-time equivalents per 100 beneficiaries of long-term care services

(Statistisches Bundesamt, 2001, 2011,2018). Because of this recruitment and retention of nurses and other staff has high priority for LTC providing organisations.

Within the LTC reform act of 2016, the German Ministry of Health called for an investigation of appropriate staffing ratios on a scientific basis for institutional long-term care. Besides, a much smaller explorative study on workforce issues for home- and community-based long-term care was commissioned. This study is in the focus of this study.

Most LTC beneficiaries are cared for in their own homes by family caregivers. People eligible for LTC benefits in home care can choose between cash payments and care-in-kind services. The fixed amount of benefits depends on the "care degree" that is determined after assessment of the Medical Board of the LTC insurances. There are five "care degrees" with the fifth being the severest form of dependency from help and support of others. The higher the "care degree", the higher the amount of benefits. Since the introduction of the LTC insurance, the larger part of beneficiaries in home care opted for cash benefits. A growing but still smaller part opted for care-in-kind services or a combination of cash and care in kind. On the home-care market in Germany in 2017, there have been about 14,000 home-care service providers with about 390,000 employees. The providers belong to welfare (appr. 33%) or are private organisations (appr. 66%). On average each provider takes care for 59 clients (private organisations: 49; welfare organisations: 84). The majority of employees is women and between 40 and 60 years of age. About 80% of employees work part time (Statistisches Bundesamt, 2018a). There are significant differences in staffing ratios among the 16 German states: The numbers of home-care staff per 100 LTC beneficiaries varied between more than 11 in Berlin and Hamburg and 5,1 in Baden-Württemberg. The average number for Germany was 7,6 (Statistisches Bundesamt, 2018b).

LTC home-care services are provided according to agreements between provider organisations and LTC insurances. Providers are reimbursed only for services that are explicitly stated in these agreements (mostly task-oriented care packages). Only in 4 of 16 Federal States in Germany services can also be reimbursed according to the time needed for care in the beneficiaries' home. In addition to LTC services, health services can be provided. This kind of "medical" home care requires the prescription of a physician for limited periods and the services are reimbursed by the sickness insurances. They only can prescribe services that have been listed by the "Federal Joint Committee", the highest decision-making body of the joint health system self-government. The complex regulatory system and the ways of reimbursement for services influence workforce and staffing issues within the provider organisations.

In general, the literature on staffing in home- and community-based long-term care is rather limited. Nevertheless, authors confirm the importance of staffing issues in this area and the adverse effects of inadequate workforce planning (Buchan & Seccombe, 2012; Francis, 2013; Royal College of Nursing, 2010).

Hurst (2006) assumes an increasing complexity in workforce planning due to the increasing number of influencing variables such as demographic change. According to Jackson, et al., 2015, the critical question is how to positively and progressively support and train nurses to meet the demands in the context of a population that is living longer and shows increasingly complex patterns of comorbidity.

What is known about this topic?

- Inadequate staffing in outpatient care influences quality of care.
- A variety of factors influence personnel planning in home and community care.
- Service provision in home and community care depends on clients' needs and preferences.

What this paper adds?

- Nursing interventions in home- and community-based care are highly heterogeneous and difficult to measure in order to determine staffing levels.
- Unlike in institutional care, professional services do not replace informal care but complement it.
- Staffing levels primarily depend on reimbursement policies and the concept of services to be delivered.

In addition to studies describing specific tools, their development and methodological testing (Baldwin, 2006; Byrne et al., 2006; Chapman et al., 2017; Grafen & Mackenzie, 2015; Jackson, Leadbetter, et al., 2015), there were also reviews of various instruments, which primarily describe different systems and strategies for workload/caseload assessment (Brady et al. 2007; Reid et al., 2008; Roberson, 2016). Reviewing the various tools, Jackson, Leary, et al. (2015) stated not only a lack of appropriate tools but also that the few existing ones vary widely in terms of staff involvement, quality, and consistency of data collected. The often implicit assumption of the existing approaches to consider home care as a linear sequence of tasks results in the simplification of care activities and their recording as activity analysis. The complexity of home- and community-based care in the context of supply and demand is thus not sufficiently differentiated Jackson, Leary, et al. (2015). Measuring workload by merely counting contacts with care recipients does not clearly show the full workload of professional carers, instead most of their work remains "invisible" Jackson, Leary, et al. (2015).

According to Bokranz and Kasten (2003), calculating numbers of staff needed for a particular business is a method by which quantitative requirements for a specific qualification at a specific time in specific organisational units are determined. Existing approaches determine staffing requirements based on workload and time. This can be done prospectively by allocating tasks to persons and/or organisational units and assigning quantities and time requirements to these persons/units. It can also be done based on estimation procedures in which experts are asked to estimate the time that is necessary for a given intervention or time-series analyses in which staffing requirements are predicted based on previous values. All approaches depend on reference values

or key figures. Finally, there are money-driven procedures in which staffing levels are determined based on financial resources available or revenues that can be generated (Bröckermann, 2016).

Despite the considerable heterogeneity and numerous influencing factors of the different approaches, two basic, possibly complementary, but not necessarily interrelated approaches can be identified: first, the approach of retrospectively determining average values of interventions to conclude the necessary number of personnel and, second, the approach based on needs of care recipients and measures derived from these needs. The calculation, however, remains very complex due to numerous influencing factors like the care-recipients' conditions in terms of need levels, illness-related needs, housing conditions, family situation, economic conditions availability and use of assistive devices. On the organisational level there are factors such as distances to clients' homes, time needed for internal activities for quality development, continuing education and number of staff available. Finally, there are regulatory frameworks to consider.

Approaches used to determine staffing levels in institutional LTC facilities do not seem appropriate for home- and community-based care due to some important differences, such as.

- Service utilisation occurs in addition, not as a replacement, of informal caregiving. This implies that it depends on the household members' perception of what is needed, not necessarily an objective degree of need. Besides, service utilisation takes place only to a limited amount of time during the day.
- Actual service provision is determined by negotiations between households and providers. Beside need factors, the negotiation process depends on the care-recipients' and her/his significant others' preferences and the existing reimbursement policies.

This study aimed at developing staffing recommendations for home-care provider organisations. It was conducted between May 2018 and September 2019 and was part of a larger study on the development of staffing levels for institutional LTC facilities conducted by the University of Bremen (Rothgang et al., 2020). The study was funded by the Quality Panel for Long-term care as part of its obligations after the LTC reform act of 2016. The objectives of the study were as follows:

- to systematise approaches to staffing in home- and community-based care
- to develop recommendations for staffing levels
- to gain knowledge about time required for nursing interventions and
- to provide recommendations for the future portfolio of appropriate home-care services

2 | METHODS

To achieve these objectives, qualitative interviews with experts and an empirical measurement of time needed for nursing interventions were conducted.

2.1 | Qualitative interviews with experts

As current approaches to staffing and workforce issues about German home- and community-based LTC organisations have not been investigated, the purpose of the qualitative interviews with experts was to get inside information on how providers decide about staffing levels, which, if any, systematic approaches they use and which additional aspects of personnel recruitment and retention are of concern to them. The persons approached as experts are considered to have in-depth knowledge on the subject of the study. They are not asked as individuals, but as representatives of a person group involved in staffing and workforce issues. The sample consisted of 30 experts representing three different groups. The largest group ($n = 21$) consisted of nursing managers or executive officers who are directly responsible for staffing and deployment in one or more provider organisations. The second group was consultants with a longstanding experience in counselling home-care provider organisations ($n = 6$) and the third group was persons with expertise in human resource management in other disciplines ($n = 3$). Experts were selected with a high degree of heterogeneity, for example, from different regions of the country, representing private as well as welfare provider organisations. Persons were contacted if they had published on management of home-care provider organisations, were known to the researchers in advance from conferences or other home-care events or were recommended by external parties.

Qualitative, guided interviews were conducted. The interview guide was developed based on the results of a literature search. It contained thematic areas such as personnel recruitment, staff shortage, personnel planning, turnover rates, networking with other care services and impact of the reimbursement system (see Table A1 for a display of the topics and sample questions). The interviews were conducted personally ($n = 12$), by telephone ($n = 17$) or in written form ($n = 1$). The duration was 60 min on average (range: 27 to 113 min). Interviews were recorded, transcribed and analysed using qualitative content analysis (Mayring, 2015). Analysis followed the thematic areas from the interview guide that were in general sufficient to express the main categories of the interviewee's statements. A range of sub-categories were developed that illustrate the dimensions of the thematic areas. Interviews were conducted in German language.

2.2 | Empirical measurement of time for nursing interventions

While the purpose of the interviews was to retrospectively analyse current practices of staffing and workforce planning, the objective of the empirical measurement of time was to start developing a baseline for future developments and decisions and to obtain a realistic estimate of the time required for necessary and desirable nursing interventions. The challenge of such design is the conceptual framework that is used to determine what is being measured. The existing reality

of German home care is – as described above – determined by contracts between provider organisations and insurances that contain only a very limited set of home-care services. Time measurement in this study was to include an idea of home-care nursing services that go beyond that and are necessary and desirable in the future. The set of services and interventions to be observed was derived from an expertise commissioned by the German Ministry of Health on structuring and describing nursing interventions following the new definition for LTC eligibility criteria (Wingenfeld & Büscher, 2017). These descriptions are much less task focused than existing descriptions of LTC services and extend their scope significantly. Because the provision of services that match this description requires space for professional decision making and flexibility in negotiations with clients and their caregivers, participating organisations needed to have the opportunity of being reimbursed for these kind of services. In most German states, the existing regulatory framework only allows reimbursement of predetermined and mostly task-oriented services. As a consequence, only organisations from four federal states with time-oriented (instead of task-oriented) reimbursement policies were asked to participate.

A data collection form was developed to measure the amount of time needed for the interventions (see Table 1). For the measurement of time, nurses were observed by members of the research team during care provision in households. They informed researchers about the care they intended to provide according to existing care plans. Researchers used a stopwatch to determine how much time was spent on the different interventions. Where feasible, participating households were visited on 2 consecutive days to measure time for the same interventions on two different occasions. After care provision, nurses were asked whether they would need more time or whether and if so, which planned interventions could not have been carried out. To characterise the sample, information regarding the patients' age, gender, degree of care, household situation and the planned interventions was collected. Data collection took place from March to May 2019. Recruitment of home-care provider organisations was supported by member organisations of the LTC Quality Panel and the experts who participated in the interviews. Data collection took place after informed consent was obtained from providers and care recipients. Ethical approval for the study was obtained from the Ethical Committee of Osnabrück University of Applied Sciences (Germany).

Sample characteristics and the time measured were analysed using descriptive analyses. Therefore, average values were calculated as mean values and/or median and standard deviations. Besides, the minimum and maximum values were identified. Due to the small size of the subsamples and the high heterogeneity of the data, inferential statistics were not carried out.

TABLE 1 Data collection form for the empirical measurement of time for nursing interventions

Case-related measurement of time for nursing interventions		
Qualification of the nurse		
Data of the person in need of care		
Sex	□ female □ male	
Age (in years)		
Degree of care	□ 1 □ 2 □ 3 □ 4□ 5	
Relatives integrated into the care	□ yes □ no If so, which one:	
Planned nursing care		
Measures of "medical" home care		
Interventions	Time needed	Notes
Structuring and managing the nursing process (Assessment, Planning of services, Implementation, Evaluation)		
Monitoring specific aspects of the care situation (e.g. general condition, skin observation)		
Prevention of health risks due to illness-, person- or environmental factors		
Communication (Talks, negotiations and agreements)		
Support regarding maintaining and promoting mobility (e.g. mobility status, activities)		
Support regarding cognitive and communicative abilities		
Support with behaviour and psychological problems		
Support with self-care activities regarding (Nutrition, Body care, Elimination / Excretion, Dressing/grooming)		
Support with illness-related requirements and burdens		
Medical care (e.g. insulin injection)		
Support with daily life and social contacts (e.g. structuring the daily routine)		
Support with housekeeping and domestic activities		
Support of family carers to improve their caring competences and reduce burden of care		
Total time for direct nursing interventions		
Non-case-related measurement of time for indirect nursing interventions		
Internal working meetings		
Coordination, organisation, administration		
Travel times		
Educating nursing students		
Total time for indirect nursing interventions		

3 | RESULTS

3.1 | Results from the expert interviews

In the interviews, a range of topics related to workforce issues in home- and community-based long-term care was addressed. In this study, the main findings are presented, Table 2 shows some quotes according to the categories identified.

TABLE 2 Quotes from experts in qualitative interviews according to the identified categories

Overall situation
"At the moment really dramatic, I would say. And I mean really, without wanting to overdo it." [I 3; P: 3–3]
"And part of the problem is hat over the next years 30 per cent of employees will be gone, because they are 50+" (I 26, P: 11–11)
"Competition in home care nursing is a competition about prizes, not about quality of care, and in fact it is on the back of the nurses by salary dumping, extreme condensation of work requirements and splitted working shifts" (I 27, P. 40–42)
Staff turnover
"When they are training someone new, they have down time, duplication of work, training costs. I don't think that's something I can underestimate, what it means to have new staff all the time (…). Sure, (…) I think for a functioning team you need continuity, so that people get to know each other and trust each other. And where we have a high turnover of personnel, there is always a certain fundamental dissatisfaction, I would call it (…). And in the end, it always has an effect on quality." (Interview 29; Position: 103–103)
Personnel recruitment
"I recommend target group tailored recruitment, and preferably in those places where those people whom you want to recruit, actually spend their time. I also recommend to distinguish whom you are looking for, those, who want to come back and just read adverts in newspapers or younger people who are to be found on facebook, snapchat or instagram." (I 2, P: 14–14)
"Yes, exactly with the effort it takes. That's a lot, networking is just very time consuming. And above all, it doesn't have an immediate effect, so networking needs two years of preparation, roughly. Sometimes even five." (I 9; P: 17–17)
" […] external personnel marketing, there are so many varities, (…) fancy advertising flyers, great internet presence, but it only works if I'm good internally, only if I manage that my current employees, the ones I already have, I have to understand them as a treasure, I don't get any others, yes, that's my treasure. I have to be good to them, I have to make them happy and satisfied, because if they are happy and satisfied, then I am also attractive for others." [I 7; P: 65–65]
"I would also employ personnel ‚in stock', to be honest. I never had too many employees, not during the past five years" (I 8, P.12–12)
Quantitative personnel requirements
"Today, the question is no longer whether I want to grow, but rather how do I get the personnel (…)." (I 4; P: 37–37)

3.1.1 | Overall situation

Experts highly agreed that the current staffing situation in home care is very critical. The demand for home-care services is growing faster than the number of professional staff. "In recent years, the service requirements of those in need of care have been expanded, but the professional capacities have not been strengthened to satisfy this. That is how it is. So people can't use all the services they are entitled to, because there is no one to provide them" (I 11; P: 125–125).

The organisations compete in the recruitment of nurses. There are different patterns of staff shortage between urban and regional areas. While in urban regions there is competition between health and long-term care providers to attract nurses, in rural areas the number of staff seeking employment in general is very low to non-existent. A significant problem is great differences in salaries of nurses in hospitals, nursing homes and home-care services. The salary gap is triggering a suction effect that makes nursing staff moving from the home-based care to other facilities. However, some unique features of home-care work (e.g. autonomous working methods) prevent nurses from doing so despite the lower salary.

The situation is aggravated by the rather high average age of many nurses and their impending retirement. At the same time, the number of newly qualified nurses, although stable at the time being, is not likely to rise significantly to compensate for the increasing need.

3.1.2 | Staff turnover

The frequency and intensity of staff turnover varies greatly between provider organisations. Some experts report low turnover rates. High identification with and awareness of one's importance for the company were mentioned as reasons. In other organisations, staff has stronger thoughts of giving notice, which results in higher turnover rates. Experts considered poor leadership and lack of professional human resources development as main reasons for this. On the other hand, unrealistic expectations of nurses about working in home care were reported as a possible reason. There is general agreement that high turnover is very damaging. It goes along with high costs for recruiting and training new staff and it is also negative for the team, and quality of service provision.

3.1.3 | Dealing with staff shortages

Experts agreed that an overall staff shortage exists throughout the country with significant overtime of staff as a consequence. The organisations use different strategies to address the shortages. One is to look for more efficient ways of service delivery by re-organising the nurses' daily tours. Some organisations introduced electronic applications that calculate the time in minutes nurses have to provide services economically. Other experts warn to relying too strongly on this approach as it puts nurses under additional pressure and increases their workload.

Recruitment of less qualified staff and an increase in part-time jobs was a reported strategy. Very reluctantly some organisations use temporary employment, others explicitly exclude this option, because it is often expensive and leads to long training periods.

Increasingly people in need of home care have to bear the consequences of staff shortages and new clients are rejected. Some organisations introduced admission stops, or have waiting lists. Another consequence is a tendency to reduce the catchment area.

3.1.4 | Personnel recruitment

Due to the existing situation, staff recruitment and retention are becoming increasingly important: "And what are we doing today? Personnel, personnel, personnel. My working days always centre around recruitment, how to improve working conditions, what are employees' biggest problems. Well, it actually has become a very important topic" (I: 29, P: 15–15). Organisations have a wide range of recruitment options, which can be divided into external (e.g. target group–specific marketing, recruiting nursing staff from abroad and monetary incentives such as starting premiums) and internal (e.g. improvement of working conditions, appreciation and strengthening team) strategies. Internal strategies are intended to create a positive working environment in which employees enjoy working and thus make the employer attractive for new colleagues.

Unlike some years ago home-care providers are not in a position any more to decide, whether they want to grow or serve more clients. Due to the critical staffing situation, their size is largely determined by the personnel available. "Today, the question is not how to grow, but how to get the personnel (…)". (I: 4; Position: 37–37). Accordingly, the availability of personnel decides on growth or stagnation of the organisation. Expansion can hardly be planned and even the larger organisations are only able to maintain their current size.

3.1.5 | Quantitative personnel requirements

Regarding quantitative requirements there have been changes in recent years. Previously, the amount of home-care services delivered was based on the number of customer enquiries. Nowadays, the situation is reversed, that is, the amount of services provided depends on the number of staff available. Because of this personnel requirements planning is described as non-existent or obsolete. As a consequence, almost all organisations recruit every suitable employee and adjust the customer base accordingly.

Sales and profitability form the central planning basis. To calculate these, net and productive working time are determined. The latter refers to the effective time nurses spent with the care recipient. This is the core element of personnel requirements planning because it generates all revenues and covers costs. The productive working time corresponds to the total working time minus time required, but not in the clients' home. This includes vacation, illness, meetings, travel time, coordination and organisation time and contributes with a proportion of 32% to 45% to total working time. It has to be estimated how much time individual clients need and to what extent the deployment is economical. Experts stressed that these times can vary between organisations and individual clients due to the many influencing factors.

In summary, experts agreed that the determination of adequate staffing levels for home- and community-based care is not the main concern of providers. They stressed that general availability of staff with different qualification levels and the problems of existing regulation on services and their reimbursement are of higher concern.

3.2 | Results from the empirical time measurement

In total, 678 interventions in 129 households provided by 14 provider organisations were recorded. Services were provided by registered nurses ($N = 4$), geriatric nurses ($n = 6$), a physician assistant and a nurse assistant ($n = 1$ each). The 129 care recipients received benefits from the LTC insurance or "medical" home-care services. Characteristics of the sample are depicted in Table 3. Almost half of the participants (42.6%) were visited on 2 consecutive days; remaining participants only on 1 day.

Most often ($n = 89$, 69% of all participants) time service or a combination of time and care packages and/or medical care services was agreed with the provider. Solely medical care services were provided to 23 persons (17.8%), while 17 clients (13.2%) received care packages only.

Sixty-nine per cent of participants were women, the average age was 79 years. The distribution of care degrees (6.2% degree 1, 33.3% degree 2, 34.9% degree 3, 9.3% degree 4 and 7.8% degree 5) corresponds roughly to the distribution of all LTC beneficiaries in Germany. More than half of participants (56,6%) were supported by family members.

Analysis of time measurement was based on the group of people receiving time services or a combination of time and care packages and/or medical care services only ($n = 89$). Table 4 shows average length of time recorded for direct nursing interventions. All measurements revealed high variability. For example, communication for the purpose of this study was very broadly defined and included everyday communication as well as negotiation processes between nurses and care recipients, varied between 17 s and 53 min, and support for self-care ranged from a few seconds to 44 min. The average total duration of the visits was 28 min and ranged from 4 min to 1 hr, 19 min.

Interventions to support people with behavioural or psychological problems have not taken place. Other interventions emerged only sporadically and were provided separately from the regular visits, such as interventions in nursing care planning and evaluation. Since some interventions were carried out in parallel, the total time is not the sum of the separate interventions, but the total time of data collection.

The time needed for each intervention and the total amount of time needed did not differ significantly between care degrees. However, despite high variability, there was a tendency for longer visits and longer time invested in interventions for participants with higher care degrees compared to participants with lower care degrees.

For 45 participants, time was measured on 2 consecutive days. The average difference in the duration of both visits was 3 min and 46 s (SD = 03:39, median = 02:57 min). This shows that even with the same services and the same caregiver, the visits differ

TABLE 3 Characteristics of participants in absolute and relative values

	Total number ($n = 129$)	Time or combination of time care packages and/or medical care services ($n = 89$)	Care packages only ($n = 17$)	Medical care services only ($n = 23$)
Gender, *n* (%)				
female	89 (69,0)	64 (71,9)	11 (64,7)	14 (60,9)
male	40 (31,0)	25 (28,1)	6 (35,3)	9 (39,1)
Age in years, $M \pm SD$ (min, max)	79 ± 13 (19–98)	80 ± 13 (19–98)	79 ± 11 (54–95)	73 ± 16 (28–93)
Degree of care, *n* (%)				
1	8 (6,2)	4 (4,5)	0 (0)	4 (17,4)
2	43 (33,3)	35 (39,3)	5 (29,4)	3 (13,0)
3	45 (34,9)	33 (37,1)	5 (29,4)	7 (30,4)
4	12 (9,3)	9 (10,1)	3 (17,6)	0 (0)
5	10 (7,8)	7 (7,9)	3 (17,6)	0 (0)
none	11 (8,5)	1 (1,1)	1 (5,9)	9 (39,1)
Family caregivers, *n* (%)				
yes	73 (56,6)	60 (67,4)	8 (47,1)	5 (21,7)
no	52 (40,3)	28 (31,5)	9 (52,9)	15 (65,2)
unknown	4 (3,1)	1 (1,1)	-	3 (13,0)
Data collection on 2 days	55 (42,6)	35 (39,3)	4 (23,5)	16 (69,6)

intra-individually, rendering them difficult to plan precisely. The observation protocol also contained indirect activities that usually do not take place in the care recipients' home, but are necessary for service provision. Some of these activities took place during the observations and their average length of time is presented in Table 5.

An essential part of service delivery and personnel requirements planning is the travel times between the clients' households. An average duration of 55 min, 34 s (range: 19 min – 1 hr) on day 1 and 58 min, 47 s on day 2 (range: 18 min – 2 hr, 12 min) was recorded. The travel-to-care time ratio was 1:3.

3.2.1 | Influencing factors on the duration of care and other observations

Nurses were asked after each visit, whether they would need more or less time to provide ideal care. For 10 cases, nurses indicated to need more time, particularly for additional care activities or communication with care recipients and their relatives. In some cases, more time is needed to help the clients' regain part or all of their self-care abilities, but existing time constraints prevented them from acting accordingly. Instead, they take over activities entirely for the care recipients, such as personal hygiene. Nurses also reported some cases, in which they recommended other and more services, but these were refused by the clients or their relatives for various reasons such as lack of financial resources to pay for services above the cash or care-in-kind benefit level from the LTC insurance.

Furthermore, time required can change depending on the general condition of the care recipient that is dynamic by nature and not static, particularly in the case of people with dementia, Parkinson's disease or mental illness.

Overall, time measurement posed a challenge because only interventions that actually could be observed were recorded. Several nurses' activities actually are not visible (e.g. assessing the clients' skin integrity). They are performed based on the nurses' knowledge of the situation. As long as they do not result in observable activities, they cannot be recorded and included in a study like this. Besides, time measurement of even only broadly defined interventions is influenced by parallel activities that cannot be distinctly separated.

4 | DISCUSSION

This study aimed to systematise approaches to staffing in home care, to develop recommendations for staffing levels, to gain knowledge about time required for nursing interventions and to provide recommendations for appropriate home-care services.

Figures from official statistics emphasise the increasing significance of home-care services in Germany (Statistisches Bundesamt, 2018b). The international literature reveals several attempts to determine adequate staffing levels in home- or community-based care (Baldwin, 2006; Byrne et al., 2006; Chapman et al., 2017; Grafen & Mackenzie, 2015), but so far no agreement about instruments and approaches could be identified. Although there is consensus about the need for adequate staffing and factors

TABLE 4 Average length of time needed (minutes:seconds)

Interventions	Time day 1: *M* ± *SD* (range)	Time day 2: *M* ± *SD* (range)
Structuring and managing the nursing process (Assessment, Planning and agreement of services, Implementation, Evaluation)	*N* = 3 12:34 ± 10:24 (02:00 – 26:43)	*N* = 2 08:38 ± 08:20 (00:18 – 16:58)
Monitoring specific aspects of the care situation (e.g. general condition, skin observation, temporal/local orientation)	*N* = 34 01:03 ± 01:08 (00:05 – 05:55)	*N* = 13 00:01:29 ± 00:01:24 (00:13 – 04:36)
Prevention of health risks due to illness, person or environmental factors	*N* = 25 01:30 ± 01:58 (00:14 – 10:00)	*N* = 8 04:56 ± 09:43 (00:18 – 30:27)
Communication (Talks, negotiations and agreements)	*N* = 86 19:07 ± 12:56 (00:17 – 53:36)	*N* = 34 15:28 ± 12:27 (00:42 – 42:00)
Support regarding maintaining and promoting mobility (e.g. mobility status, activities)	*N* = 48 03:35 ± 04:40 (00:05 – 25:29)	*N* = 23 05:14 ± 05:44 (00:13 – 20:00)
Support regarding cognitive and communicative abilities	*N* = 4 10:43 ± 10:31 (00:24 – 28:16)	*N* = 1 00:48
Support with behaviour and psychological problems	*N* = 0	*N* = 0
Support with self-care activities regarding Nutrition Body care Elimination / Excretion Dressing/grooming	*N* = 82 16:06 ± 09:05 (00:08 – 44:04)	*N* = 32 17:18 ± 09:10 (00:59 – 37:50)
Support with illness-related requirements and burdens	*N* = 11 01:34 ± 00:54 (00:15 – 04:05)	*N* = 2 01:04 ± 00:49 (00:16 – 01:53)
Medical care (e.g. insulin injection)	*N* = 47 03:50 ± 03:05 (00:10 – 15:55)	*N* = 24 03:04 ± 02:50 (00:10 – 13:23)
Support with daily life and social contacts (e.g. structuring the daily routine)	*N* = 5 16:22 ± 09:26 (03:00 – 30:01)	*N* = 4 09:48 ± 06:50 (02:00 – 19:14)
Support with housekeeping and domestic activities	*N* = 48 03:50 ± 05:00 (00:05 – 25:40)	*N* = 23 03:38 ± 03:30 (00:05 – 12:55)
Support of family carers to improve their caring competences and reduce burden of care	*N* = 7 02:42 ± 01:13 (01:11 – 05:08)	*N* = 2 02:49 ± 02:11 (00:38 – 05:00)
Indirect services (e.g. travel times)	*N* = 78 01:07 ± 00:57 (00:04 – 5:54)	*N* = 32 01:19 ± 02:42 (00:10 – 15:51)
Total time	*N* = 89 28:02 ± 14:01 (04:31 – 01:19:13)	*N* = 35 28:36 ± 12:12 (09:27– 56:02)

TABLE 5 Indirect nursing interventions (minutes:seconds)

Indirect activities	*n*	Time day 1 (MW ± *SD*)	*n*	Time day 2 (MW ± *SD*)
Internal working meetings	3	05:36 ± 05:21	2	03:22 ± 01:01
Coordination, organisation, administration	10	13:55 ± 06:57	12	15:43 ± 12:27
Travel times	13	55:34 ± 29:00	13	58:47 ± 35:27
Educating nursing students	1	02:55	–	–
Total time for indirect nursing interventions	27	32:38 ± 38:09	27	35:32 ± 47:26

influencing staffing needs, the discussion is at an early state (Buchan & Seccombe, 2012; Francis, 2013; Royal College of Nursing, 2010). A baseline for further systematisation exists, but needs further refinement to be used internationally. In summary, the literature does not provide instruments for calculating staff ratios, but illustrates the complexity of the activity.

In Germany, existing reimbursement policies and catalogues of task-based activities according to experts are the most influential aspect. Because of this, experts denied the priority of instruments for determining staffing levels, but rather expressed a need for a reform of existing regulatory frameworks. This would imply a discussion and decision about what kind of services should be provided in the German LTC system and what constitutes an adequate prize for these services.

The study indicates that currently the demand for home-care nursing services in Germany exceeds supply. Experts stated a risk of security of supply with home-care services. This was confirmed by another study according to which 80% of service providers had to reject clients' requests for services for 3 months (Zentrum für Qualität in der Pflege, 2019). Recruitment and retention of nurses, auxiliary nurses and other staff for home care therefore will be essential.

The measurement of time required for selected interventions revealed the huge heterogeneity of home-care service delivery. The results showed a high variability of comparable interventions and underlined the individuality of care processes. It is shown that even with the same interventions and the same nurse, the duration of visits varies intra-individually and cannot be planned exactly in advance. The nurses indicate that, regardless of specific care situations, more time is needed overall to guide those in need of care to increase independence. The time required varies according to the general condition of the person in need of care.

4.1 | Limitations

An explorative design as it was used in this study usually has limitations. Regarding the interviews, the perspective of specialised home-care service providers (such as paediatric, intensive or mental health care) has only been included to a very limited extent. Different perspectives of external counsellors and internal nurse managers could be elaborated more broadly in the interview guide. The measurement of time required for selected interventions revealed the difficulty of time measurement approaches to determine staffing levels. Challenges of time measurement included simultaneous actions and interventions as well as non-observable interventions such as skin inspections that were done, but not communicating during the actual process and therefore not observable for the researchers. Although interventions purposefully were defined in a broader sense that takes into account nurses' expertise and the need for individual decisions and adaptations, the focus of pre-defined interventions does not cover the whole care process. A small-scale approach would have made it possible to identify additional information on the interventions provided.

Following the study's design, time measurement was carried out on a small sample of people in need of care. Due to the small size of the subsamples and the high heterogeneity of the data, inferential statistics were not carried out.

4.2 | Implications

To further inform the discussion on adequate home- and community-based LTC services client characteristics need to be more taken into account. In the German context, the focus only is on description of services and interventions. Changes in actual and potential care recipients such as a rising number of elderly people living alone, people with a migration background, people with chronic illnesses, changes in family structures and their influence on informal care provision all are not part of the discussion. After this exploratory study a possible next step would be to match typologies of home-care arrangements with various sets of home-care nursing services and to calculate efforts and necessary resources.

Overall, the study shows that a change of services provided cannot easily be introduced into an existing system. The effort of expanding the portfolio of professional nursing services and determining staffing levels needed for this provided important results for further discussion and development, but did not answer all the questions related to it. The discussion about staffing in institutional long-term care in Germany was begun almost 25 years ago. The one on adequate staffing in home care has just started.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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