

# Employment arrangements and well-being of migrant live-in care workers: Evidence from a study of Polish live-ins in Berlin

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## Abstract

*This paper is the first to provide generalizable estimates on the economic and subjective well-being of 24-hour migrant care workers (“live-ins”) by type of work arrangement. In our empirical analyses, we draw on data from a survey on Polish live-ins working in Berlin selected via respondent-driven sampling (N=222), which allow us to compare live-ins who are contracted by care agencies with live-ins in other types of employment. The analyses show considerable differences in various outcomes between agency live-ins and nonagency live-ins. Compared to agency live-ins, nonagency live-ins are more likely to earn higher wages than agency live-ins but are more likely to report having less time to rest. It is therefore not surprising that we also find variation between agency and nonagency live-ins on different satisfaction outcomes. These findings have major implications for the regulation of migrant live-in care workers’ employment.*

*Keywords: migrant care work, live-ins, care agencies, working condition, respondent-driven sampling (RDS)*

## Introduction

Migrants have become increasingly important providers of senior care in many countries (e.g., Anderson 2012; Shutes/Chiatti 2012). In Germany, where 22% of the population is aged 65 or above (compared to less than 15% in Ireland, OECD/European Union 2022), several government initiatives have sought to attract care workers from abroad to address the population’s

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care needs (Aulenbacher/Lutz/Schwiter 2021; Jacobs et al. 2020; Theobald/Luppi 2018). In addition to the formal care workers supporting older people in nursing homes and mobile nursing services, there are also migrant care workers living in the same household as the person in need of assistance. Care workers of the latter type are commonly referred to as live-ins, 24-hour-care workers (Österle/Bauer 2016), migrant live-in caregivers, home care workers (Salami/Dugleby/Rajani 2017), or round-the-clock migrant home care workers (Green/Ayalon 2018).

Live-ins are commonly described as people who live in the same household as the person with care needs. While live-ins in Germany and many other European countries organize their work in different ways, they typically stay with the care recipient for several weeks at a time and then return to their home country (if it is not too far away) for a short break before coming back (Bartig et al. 2022; Chau/Schwiter 2021; Haidinger 2013; Karakayali 2010; Lutz 2009; Schilliger 2014). As is the case with any type of work in private households, this type of employment provides scope for exploitation and illegality (e.g., Balkaran et al. 2023; Green/Ayalon 2018; Habel 2021; Salami et al. 2017; Schabram/Freitag 2022; Schwiter/Berndt/Truong 2018).

Although the topics of migration, senior-care supply, and illegal and precarious employment are of paramount relevance to policy makers and members of society at large, there is surprisingly little generalizable evidence on migrant live-in care workers. Most existing studies on employment in the home-care field in Germany are based on qualitative interview data (e.g., Emunds/Schacher 2012; Ignatzi 2014; Karakayali 2010; Kniejska 2016; Satola 2015). In addition, there are a couple of studies based on standardized survey data collected on convenience samples (e.g., Bartig et al. 2022; Becker 2023; Becker/Komitowski 2022; Hielscher/Kirchen-Peters/Nock 2017; Isfort/Von der Malsburg 2014; Petermann/Ebbing/Paul 2017). These studies have repeatedly pointed to the physical and psychological strain experienced by live-in care workers (Kriegsmann-Rabe et al. 2023; Schilgen et al. 2020). Individual case studies and journalistic works on home care have also highlighted a range of illegal and semilegal practices (e.g., Drepper 2016; Phan-Warnke/Freitag 2021; Stolterfoht/Martiny 2013). Yet, there is still a lack of generalizable quantitative evidence on the working and living situations of migrant live-in care workers—in particular regarding how the organization of work affects the economic and subjective well-being of migrant live-in care workers.

One of the reasons why so few standardized surveys have been conducted on live-ins is that they are a hard-to-reach population. Researchers would need a sampling frame of live-ins to draw a probability sample, but this sampling frame does not exist. Moreover, in relation to a country's entire population the population of live-ins is relatively small, meaning that live-ins rarely appear in general population samples. Finally, some migrant live-ins may not wish to identify openly as live-ins because their employment contracts are not compliant with employment laws. To overcome these problems, this paper uses respondent-driven sampling (RDS) (Goel/Salganik 2010; Heckathorn 1997; Heckathorn/Cameron 2017). RDS is specifically designed to sample hard-to-reach and hidden populations while also allowing researchers to draw inferences about the underlying population and providing generalizable estimates.

As it is important to have empirical evidence on the subjective and economic well-being of migrant live-in care workers to ensure both decent working conditions and high-quality care, we compare the living and working conditions of migrant 24-hour-care workers by type of employment. Live-ins can be directly employed in a private household both on a legal or a semi-

legal/illegal basis, but they can also be employed by a care agency. Care agencies serve as brokers between the live-in and the care recipient and have—both for practical and legal reasons—become popular in Germany (e.g., Leiber/Rossow 2022; Leiber/Rossow/Frerck 2020). There are several advantages and disadvantages of both types of employment arrangement for live-in care workers' economic and subjective well-being (Schwiter/Villalba Kaddour 2024; Hussein/Turnpenny/Emberson 2024 for UK; Amorosi 2024 for Italy). In our paper, we therefore ask: How does the economic and subjective well-being of migrant live-in care workers vary between agency and nonagency live-in care workers?

We answer this question by studying live-in care workers from Poland working in Berlin who were recruited via RDS (N=222). Live-in care workers from Poland are one of the largest—if not the largest—group of live-in care workers in Germany (Becker/Fritsche/Komitowski 2021; Ignatzi 2014; Kniejska 2016). Our analyses show that agency work is the most common type of employment for Polish live-in care workers in Berlin. To our surprise, we found that only one out of five live-ins are employed informally (i.e., they have no written contract). Second, agency live-ins tend to report greater satisfaction with their lives in general, and greater relationship satisfaction with their families, their clients, and the relatives of their clients than nonagency workers. They also tend to be happier with their standard of living. At the same time, however, agency workers are less satisfied with their pay than nonagency workers. We attribute these differences in satisfaction to differences in working conditions, which is the third major finding of our analyses. Compared to agency live-ins, nonagency live-ins in Berlin are much more likely to earn higher wages. This is not surprising given that care agencies tend to work for profit and that the cost of services provided by profit-oriented agencies, such as training, placement, or legal assistance, also have to be covered. Our analyses also suggest that there are some advantages for live-ins in employment through care agencies. Higher proportions of agency live-ins report longer breaks and at least one day off per week compared to nonagency live-ins.

In offering these findings, our study provides generalizable findings about differences in the living and working conditions of 24-hour migrant care workers by working arrangements (and hence social policy regulations) and thereby contributes to the growing literature on migrant live-in care workers. The insights generated by our study are relevant for policy makers wishing to regulate a potentially increasing labor market such that it benefits both older people and live-in care workers and generate valuable insights for the regulation and control of senior-care work in private households.

### **Live-in-care work in Germany**

Today, around 80% of the five million people who need care in Germany currently live in their private home (Statistisches Bundesamt (Destatis) 2022). These individuals are predominantly cared for by family members and relatives, as Germany's publicly-funded care allowance provides home-based care incentives for older and sick people to continue living at home (Ehrlich/Kelle 2019; Horn et al. 2019). Due to growing labor force participation by women (which has not been accompanied by a similar adoption of care responsibilities by men), family members are limited in the extent to which they can actually care for their older relatives (Palenga-

Möllenbeck 2013a; 2013b). This care gap is therefore partly filled by paid, live-in care workers, who typically take on 24/7 responsibility for older people (Emunds 2016).

While exact figures on the number of live-in care workers in Germany are not available, extrapolations based on official statistics from Austria suggest that around 600,000 live-in care workers currently work in Germany (Petermann/Jolly/Schrader 2020; Steiner et al. 2019). The reliance on live-in care workers to take care of sick and older people began to grow in the 1990s after the collapse of the Soviet Union, when a growing demand for care workers in Germany coincided with a difficult economic situation in the Eastern European countries. It has been growing ever since (Satola 2015). The majority of live-in care workers in Germany therefore tend to come from Poland (Ignatzi 2014; Metz-Göckel/Münst/Kałwa 2010) and other Eastern European countries like Czechia, Hungary, and Romania (Kniejska 2016). In light of the increasing demand, however, the number of live-ins from countries outside of the European Union has been rising and is estimated at around 133,000 persons (Becker et al. 2021).

At present, there is no generalizable information about the socio-demographic backgrounds of live-in care workers. The existing literature on live-in care workers is predominantly based on (in-depth) qualitative interviews (Städtler-Mach/Bünemann 2023) and on surveys conducted on convenience samples (e.g., Bartig et al. 2022; Becker 2023; Hielscher et al. 2017; Petermann et al. 2017). These studies suggest that live-in care workers are predominantly older women who take up live-in care work to ensure financial security for themselves or their family (Metz-Göckel et al. 2010; Satola 2015) and who leave a family behind; that is, they have children and are married (Ignatzi 2014; Metz-Göckel et al. 2010). They tend to have advanced educational credentials but are not specialized in nursing (Ignatzi 2014).

Likewise, generalizable information about the working and living situation of live-in care workers is also missing. The present literature, based on interview studies and nonprobability samples, suggests that migrant live-ins perform a broad range of tasks in their daily lives, ranging from general housekeeping (Hielscher et al. 2017; Petermann et al. 2017) to specialized care tasks for which they do not have formal training (Becker 2016). Additionally, live-ins are often the primary social contact for the people they live with and therefore perform a lot of emotional care work (Becker 2016; Kniejska 2016). Depending on their client's health status, this work can be both physically and psychologically taxing. In addition, living together with the client may lead to limited privacy and little free time, because 24/7 availability is (implicitly) expected. Therefore, it is not surprising that live-ins report feeling socially isolated and having interpersonal conflicts with the clients or their relatives. The interpersonal conflicts might also be caused by limited German language skills (Kriegsmann-Rabe et al. 2023; Schilgen et al. 2020). While estimates on working hours and wages based on interview studies and nonprobability samples are not necessarily valid, most studies suggest that live-ins have hardly any scheduled breaks because they are always on standby (Karakayali 2010; Schabram/Freitag 2022). Studies have also provided data on payment, which suggests that pay is low (Ignatzi 2014; Kałwa 2010; Metz-Göckel 2010). As of today, however, it is not clear whether these findings are generalizable to the entire population of live-in care workers and whether they apply equally to care workers employed on different types of contracts.

## Employment of live-in care workers as unequal exchange relationships

To examine whether and why the working and living conditions of 24h-care workers may vary, we apply a social exchange perspective to the different types of contractual agreements under which live-ins may work. To do so, it is important to acknowledge that employment relationships are generally characterized by imbalances in power and dependence. If we conceptualize power as an inverse function of dependence (Blau 1964; Emerson 1972a; 1972b), employers tend to have more power than employees (as employees tend to be more dependent on their employer than vice versa). Employment relationships are therefore typically described as unequal power constellations (Shore/Tetrick 1994). Yet, the degree to which employment relationships are characterized by power imbalances varies with various situational and contextual characteristics.

For various reasons, employment relationships in the domestic care sector are particularly likely to be characterized by great imbalances in power and dependence (e.g., Balkaran et al. 2023; Green/Ayalon 2018; Habel 2021; Salami et al. 2017; Schabram/Freitag 2022; Schwiter et al. 2018). First, the relationship between the provider and the recipient of care work is typically very close and therefore sometimes even described as a “prisoner-of-love” dilemma, meaning that it is difficult—if not impossible—for the care worker to insist on legal entitlements or to go on strikes (Hipp/Kelle 2016; England 2005). Second, and closely related, domestic care work is much more likely to be performed on an informal basis; not all aspects of the employment relationship may be contractually defined and in conformity with legal standards, as legal enforcement and control options are limited. Third, due to the even greater precarity in domestic care, care workers typically come from lower income countries (Ayalon 2022; Palenga-Möllenberg 2013a) and do not necessarily speak the language of the country where they work, which increases their dependence on their job.

Imbalances in power and dependence are, moreover, also contingent on the regulatory and economic context. For instance, imbalances in power and dependence between the employee and the employer are lower when workers enjoy dismissal protections. The same applies when unemployment rates are low and workers are less dependent on a particular employer because they have ample alternative employment opportunities (e.g., Hipp 2016). With regard to live-in care work, care agencies, which can be conceptualized as brokers between the live-in and the care recipient, should also affect the extent of imbalances in power and dependence between the care provider and the care recipient. (e.g., Leiber/Rossow 2022; Leiber et al. 2020). On the one hand, care agencies may decrease imbalances in power and dependence between the live-in care provider and the care recipient by acting on the care provider’s behalf. For example, agencies could act as gatekeepers that pre-select the households in which live-ins work, they could ensure that live-ins’ working conditions and pay meet minimum standards, and they could provide important resources to live-ins in the form of training. Given that live-ins face language and cultural barriers, care agencies may hence strengthen live-ins’ positions vis-à-vis care recipients and their families. In the German context, such positive effects have been ascribed to some faith-based care agencies (Isfort/Von der Malsburg 2014 on Carifair; Städtler-Mach/Bünemann 2023 on Carifair and FairCare, both of which are brokering care agencies).

On the other hand, however, care agencies may actually increase imbalances in power and dependence. In contrast to the individual care recipient and their family members, who are in fact highly dependent on the benevolence and good will of the live-ins to act in the care recipient's best interest, care agencies are profit-maximizing organizations with a vital interest in extracting the maximal financial advantage from either employing care workers or matching live-ins and care recipients with each other. Care agencies are not dependent on a single provider of care (as a private household is) and are therefore less dependent on an individual live-in. Evidence from qualitative studies likewise points to the exploitative character of care agencies (Ignatzi 2014; Satola 2015).

### **Employment contracts of live-in care workers in Germany**

Live-in care work in Germany is largely unregulated (Larsen/Joost/Heid 2009; Schabram/Freitag 2022; Städtler-Mach/Bünemann 2023), which leads to a great variation in live-ins' work arrangement and differentiates the situation of live-ins in Germany from those in Austria (Aulenbacher/Prieler/Leiblfinger 2021) and Switzerland (Schwiter/Steiner 2021). To systemize the great diversity of employment models in Germany, we rely on previous research to distinguish the following three main types of employment arrangement for migrant live-in care workers (for a short overview, see Phan-Warnke/Freitag 2021; Haberstumpf-Münchow 2020; Benazha 2021; for a detailed description from a legal point of view, see Bucher 2018; or Kocher/Potocka-Sionek 2022):

- 1) The first type of employment arrangement, which, according to estimates, is also the most prevalent one, is best described as a "posting model." Empirically, there are two types of "posting" models: The live-in can either have an employment contract or a freelance contract with a care agency in the country of origin; this care agency is expected to also employ care workers for the local market in the country of origin (e.g., Poland). In accordance with EU law, the agency is allowed to operate in another country temporarily and therefore establishes a contract with a private household in Germany. De facto, the agency hence operates as an intermediary by "posting" Polish staff to the German market. In this type of contractual agreement, the receiving country's labor laws (e.g., German minimum wage or working time restrictions) apply, but social insurance contributions have to be paid in the posting country. Live-ins who have a freelance contract (instead of an employment contract) with the care agency in the country of origin are not covered by either country's labor laws and social security regulations (Phan-Warnke/Freitag 2021; Haberstumpf-Münchow 2020; Benazha 2021; Bucher 2018; Kocher/Potocka-Sionek 2022).
- 2) Live-ins can also have a direct contract with the private household—either in the form of an employment contract or a contract for the delivery of services. Due to the high costs associated with direct employment—because of minimum wage laws, the need to pay social security contributions, and the cost of compliance with labor laws—employment contracts with private households are rather

rare. By contrast, contractual agreements for the delivery of services—i.e., a form of self-employment—seem to be more prevalent. This type of self-employment is possible if the live-in establishes their own care business, either in Germany or another European country. In the latter case, the live-in “posts” themselves to Germany. However, live-ins with their own business in Germany tend to operate in a legal grey area or may engage in bogus self-employment. To really qualify as self-employed, they would have to have more than one client (at least over an extended period of time); if they work according to the “self-posting” idea, they would be required to also offer care work services in the country where their business is located. To comply with regulations to distinguish true self-employment from bogus self-employment, live-ins should also not receive any direct instructions from the care recipient or their relatives. This, however, is also not feasible in practice (Benazha 2021; Bucher 2018; Haberstumpf-Münchow 2020; Kocher/Potocka-Sionek 2022; Phan-Warnke/Freitag 2021).

- 3) Lastly, live-ins can also work in private households without having any type of written contract and legal protection. In this case, all agreements concerning payment, working hours, tasks, and so on are made verbally between the care recipient or her/his family and the care worker (Phan-Warnke/Freitag 2021; Haberstumpf-Münchow 2020; Benazha 2021; Bucher 2018; Kocher/Potocka-Sionek 2022). Because care workers in such circumstances do not have a third party acting on their behalf—e.g., a care agency that sets the terms of the working arrangement—and because they have no legal protection, they are in a highly precarious and vulnerable position. Care workers who have the necessary language skills and background information are more likely to successfully navigate this type of work arrangement—which admittedly also puts the client and their families at risk (see Lawler/Hipp 2010).

All of these contractual arrangements are highly likely to violate some laws, and live-in care workers of all kinds tend to work more hours than allowed by the German Working Time Act. Nonetheless, they encounter varying degrees of dependence on the care recipient and their family in these three dominant types of employment arrangements. We therefore expect that live-ins’ subjective and economic well-being differ between the different types of employment arrangements. Consequently, in our empirical analyses, we compare the satisfaction with different life domains and the working conditions of migrant live-in care workers who are employed or contracted by care agencies with those live-ins who do not have such third-party support.

### **Data and Methods**

Migrants live-in care workers are a “hard-to-reach” population (Hipp/Kohler/Leumann 2019). Specifically, there is no sampling frame from which to draw a probability sample, and the size of the total population of live-in care workers is too small to be sufficiently covered in general population samples. Moreover, due to their potentially limited language skills and the fact that

they are frequently employed on dubiously legal contracts or none at all, migrant live-in care workers may be unlikely to participate in nontargeted probability surveys.

To collect our data, we therefore used respondent-driven sampling (RDS), a method designed to survey hard-to-reach or hidden populations (Heckathorn 1997; 2002). Basically, RDS is a network-based sampling method that starts with a convenience sample, i.e., nonrandomly selected “seeds,” and incentivizes all respondents (i.e., seeds and their recruits) to participate in the survey and to recruit a predetermined random sample from their contacts from the target population to also participate in the survey. The chains through which additional participants take part in the survey are tracked. Drawing on Markov chain theory, researchers use the respondent’s network size and composition to estimate selection probabilities for each sampled unit. The longer the recruitment chains are, the less dependent the sample structure becomes on the seeds. This means that biases introduced by nonrandom selection of seeds become smaller as the process of recruitment within social networks stabilizes, i.e., as the sample reaches equilibrium. Once this equilibrium is reached, the distribution of demographic characteristics, behaviors, or other relevant factors in the sample no longer changes significantly in any additional recruitment wave and reflects the underlying distribution of the target population, i.e., the results are generalizable (see Gile et al. 2018; Heckathorn/Cameron 2017).

To allow for valid statistical inference using RDS-generated data, some assumptions need to be met. First, there are no isolated subgroups within the network, and every individual of the network can be reached by another individual through a series of network ties. Second, the network is undirected (symmetric), i.e., the relationships between members of the target group are reciprocal. Third, the information about respondents’ self-reported network size is reliable. Forth, respondents randomly recruit other respondents from their network, i.e., the coupons are not preferentially distributed within the respondent’s personal network. Fifth, sampling occurs with replacement, that is, at least in theory, respondents can participate in the study several times (Abdesselam et al. 2020; Gile et al. 2018; Heckathorn/Cameron 2017). If these assumptions are met, the final sample of an RDS design will share the properties of a probability sample and generate generalizable estimates (see Gile et al. 2018; Goel/Salganik 2010 for a critical review of RDS assumptions; Heckathorn 2002; Lee et al. 2017). The generated data can be used to calculate point estimates and descriptive group comparisons. Although RDS has also been criticized in several respects, particularly regarding the precision of the point estimates (Goel/Salganik 2010), it was the most promising way to sample migrant 24-hour care workers without large selection biases.

The data were collected between 2018 and 2020 in Berlin. The people who participated in the survey (N=222) received a primary incentive of €40 and a secondary incentive of €8 for each referral who participated in the survey. Each participant could recruit a total of up to four referred individuals to participate in the study, which yielded a total financial incentive of up to €72 per person.

All interviews were conducted with a standardized questionnaire with two parts. The first part consisted of four consecutive questions to measure the respondent’s network size (see Appendix Table A1 for question wording). As the respondent’s network size is crucial for the RDS-estimator calculation, this part was administered face to face by a Polish speaking interviewer. The second part of the questionnaire contained all other questions. As there were also sensitive



ones, we opted to use a self-administered CAPI mode. The interviews were conducted at one of the designated interview locations or at a location determined by the live-in themselves (Hipp et al. 2019).

In our empirical analyses, we distinguished between two types of employment arrangements of migrant live-in care workers: agency live-ins and nonagency live-ins. This distinction is based on both substantive and methodological considerations. First, the substantive reason for this distinction relates to the fact that agency workers are not “lone warriors” who are on their own when it comes to designing and enforcing contracts. Instead, agency workers are embedded in an institutional setting that can provide them with both legal and social support and hence reduces their dependence on the household that employs or contracts them (and increases their power). Nonagency workers, by contrast, are left on their own to a much greater extent; this can generate particular challenges when uncertainties or even conflicts regarding pay, responsibilities, and working conditions arise. Second, due to the limited number of observations in our data, we had to combine the different groups of work arrangements that migrant live-in care workers in Germany typically have.

*Table 1: Overview distinguishing classification of agency vs nonagency live-in care workers*

	<b>Description</b>	<b>Coding considerations</b>	<b>Category</b>	<b>N</b>
<b>Agency live-ins</b>	Direct employment with Polish care agency (posting contract, “Entsendung”)	Contract with care agency, no (registered) business in Poland or Germany, working instructions from care agency	1	74
	(Il)legal “worker leasing” by care agency	Contract with care agency, no (registered) business in Poland or Germany, no working instructions from care agency but from care recipient/their family	2	27
	Direct employment with care agency or bogus self-employed by agency	Contract with care agency, (registered) business in Poland or Germany, working instructions from care agency	3	23
<b>Nonagency live-ins</b>	Illicit employment	No contract or lacking information about contract (refused to answer or don’t know as answer)	4	47
	(Bogus) Self-employment	No written contract, (registered) business in Poland or Germany, no working instructions from care agency	5	5
		Contract with private household, (registered) business in Poland or Germany, no working instructions from care agency (“pseudo-posting/Entsendung” Becker 2016)	6	24

	Contract with care agency (most likely just placement contract), (registered) business in Poland or Germany, no working instructions from care agency	7	10
Direct employment with private household	Contract with private household, no (registered) business in Poland or Germany, no working instructions from care agency	8	12

We coded live-ins as agency workers when they were either directly employed by a care agency (n=74), when they had a contract with the agency but neither had their own business nor received instructions from the agency (n=27), or when they had their own business but received instructions from an agency (n=23). Live-ins were considered to be nonagency workers when they had no written contract (n=45), when they did not know or refused to say whether they had a contract for their employment (n=2), when they had their own business but no written contract with a private household or a care agency (n=5), when they had their own business and a service delivery contract (n=24), or when they had their own business and a contract with a care agency but did not get instructions from this agency (n=10) (in this case, the agency presumably acted only as an intermediary) ; live-ins were also coded as nonagency workers when they were directly employed by the private household (n= 12). This classification yielded a total of 124 agency live-in care workers and 98 nonagency live-in care workers in our sample. Table 1 summarizes our classification schema for distinguishing agency and nonagency live-ins.

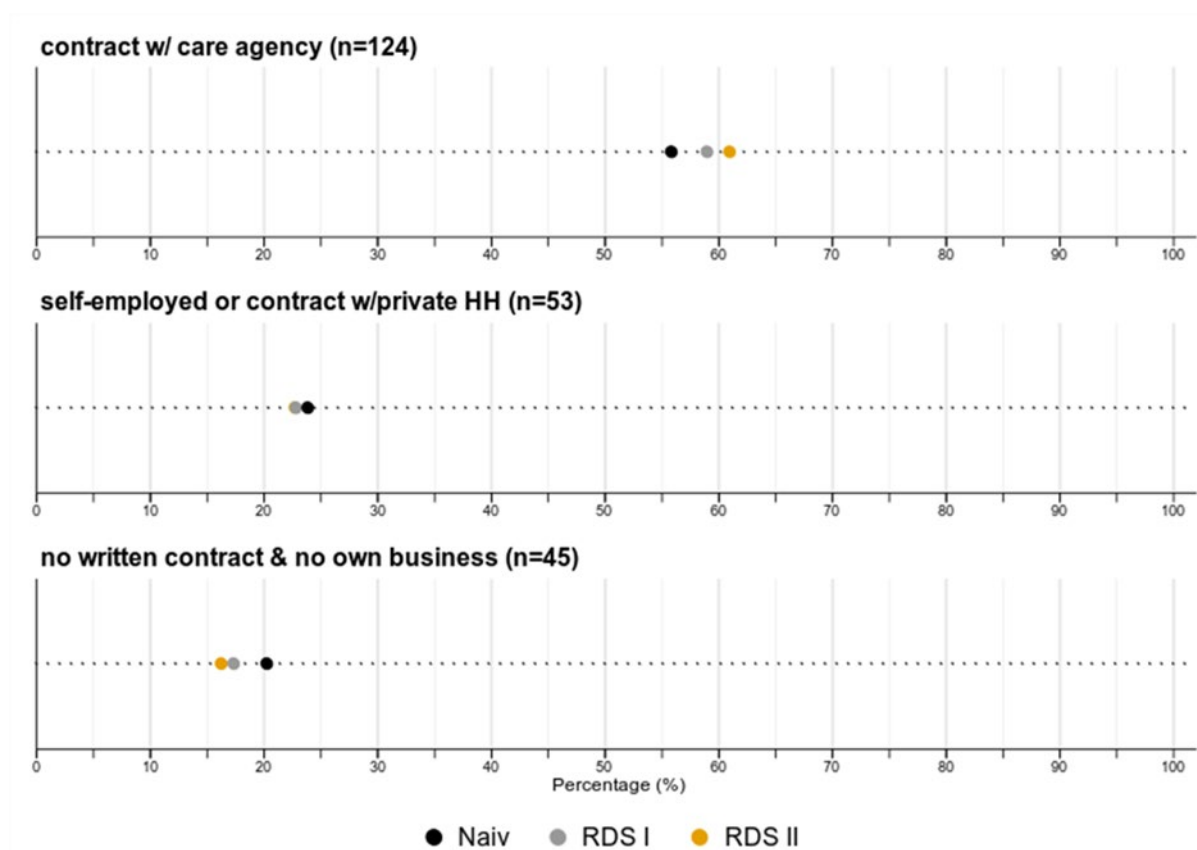
To compare the living and working conditions of 24h-care workers from Poland in Berlin, we present three point estimates for all of our analyses: In addition to the unadjusted estimate of the proportion of live-ins in a particular group (“naïve estimator”), we provide RDS I and RDS II estimates. While the RDS I estimator (“Salganik/Heckathorn”) relies on the referral patterns, network size, and the number of cross-relation ties between subgroups of interest to obtain unbiased estimates, the RDS II estimator (the “Volz/Heckathorn estimator”) does not rely on cross-relation ties to create sampling weights (Wirtz et al. 2016). Despite ongoing debates on the accuracy of these different RDS estimators, there is no consensus that either estimator outperforms the other across all settings (Abdesselam et al. 2020; Wirtz et al. 2016).

Given that our sample is relatively small and that there is no evidence that including out-of-equilibrium data in RDS analyses negatively affects RDS estimation (Wejnert 2009), we use the full sample for our estimations. To illustrate the uncertainty around the estimates, we also calculated 95% confidence intervals using bootstrapping (Wejnert 2009). To generate the bootstrap sample, we randomly selected one observation from the sample (“pseudo-seed”) along with all observations they recruited; we repeated this process until we reached the original number of observations. If we drew too many observations in the last step, e.g., because the tree of a drawn pseudo-seed became too large, we randomly deleted observations from the final step to reach the correct N. Given that there is some discussion around the precision of the bootstrapped standard errors for RDS-generated data (Wejnert 2009), we only present the results of these estimations in the Appendix (Table A2).

## Results

Figure 1 shows that the majority of Polish live-ins in Berlin were agency workers (around 60%,  $n=124$ ); nonagency live-ins were slightly more likely to be self-employed and to have direct contracts with the private household (a little more than 20%,  $n=53$ ) than to have no contractual agreement (a little less than 20%,  $n=45$ ); this last category also included those who did not know whether they had a contract or refused to provide an answer to this question. Figure 1 also shows that there were negligible differences between the different estimators in the estimated size of the live-in care population across the different types of employment contracts. The small differences between the RDS I and RDS II estimator can be taken as evidence of reliability in the distribution of live-in care workers across contract types.

Figure 1: Live-ins by employment arrangement



*Note: All observations are used to estimate proportions (including those before equilibrium was reached).*

Figure 2 displays the estimated proportion of migrant live-in care workers who were satisfied or very satisfied with their lives in general as well as with specific aspects of their lives. We saw that agency live-ins were more likely to be satisfied or very satisfied than nonagency live-ins for all domains except one. This applied to life in general (around 60% versus less than 50%), family life (around 60% versus around 50% relationship with the care recipient's relatives (around 85% versus around 55%), and current standard of living (around 55% versus 35%). The

only exception was satisfaction with pay. Fewer agency live-ins were happy with their pay than nonagency live-ins (65% versus 85%).

A possible explanation for agency care workers' greater satisfaction with their family lives is that care agencies provide substitutes when live-ins need a vacation or time off due to illness. This likely made it easier for agency live-ins to regularly return home to their families. The finding that agency live-in care workers were also satisfied with their relationships to the clients and their families slightly more often than nonagency live-ins could be attributed to the matching efforts of the care agency and the support that agency workers receive from the agency regarding contractual arrangements and communication in general. Explicit and enforceable regulations laid down in contracts improve agency workers' satisfaction with their overall situation and the relationship with the client's family. Care agencies, moreover, claim that they optimize the matching between the families looking for a care worker and the live-in (Chau/Schwiter 2021).

Figure 2 also shows that both agency and nonagency live-ins tended to be very happy overall with their relationships with the person they took care of—almost 90% of agency live-ins and around 85% of nonagency live-ins said that they were either satisfied or very satisfied. Since live-ins spent almost their entire time with the person they cared for, it is likely that this high proportion reflects a “survivor bias.” Those with good or very good relationships continued to work for the care recipient, whereas those who had poor relationships quit. Another interpretation pertains to the general tendency of people working in personal service jobs to develop close relationships with their clients (England 2005; Hipp/Kelle 2016).

Turning to the result that agency live-ins were less satisfied with their salary than nonagency live-ins (around 65% compared to 85%), it should be noted that care agencies charge a commission for the services they provide to their employees or contractors, which nonagency live-ins might pocket themselves. From this point of view, the difference in satisfaction with pay is also reasonable.

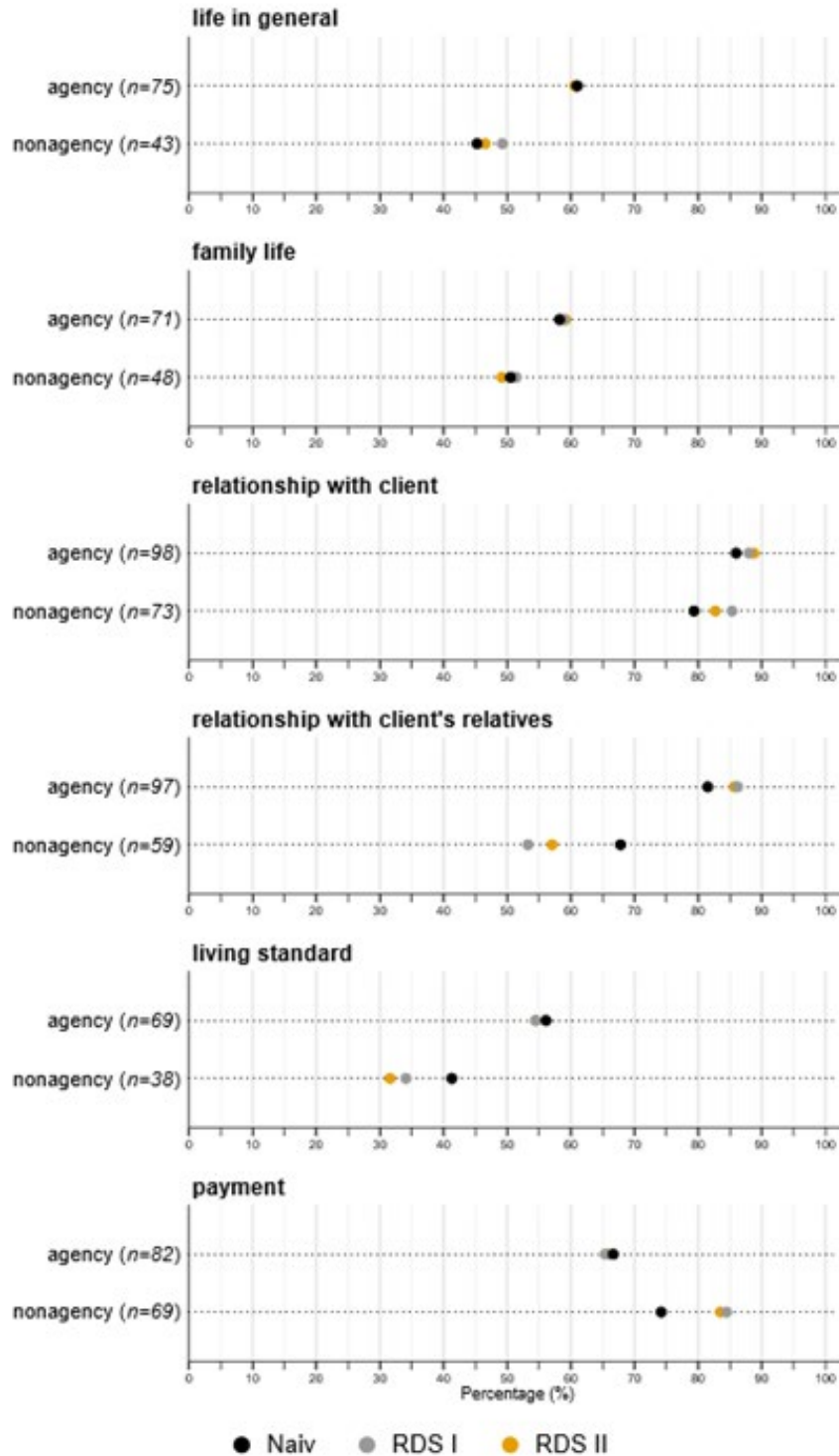
Next, we turn to the finding on the working conditions of agency and nonagency live-in care workers (Figure 3). In line with our findings regarding the differences in pay satisfaction, Figure 3 shows that only a little more than 60% of agency live-ins compared to around 90% of nonagency live-ins reported net monthly earnings of €1,300. Unfortunately, we do not have any further information on live-ins' monthly incomes, because we assumed we would observe very low incomes among migrant live-in workers, as suggested by a number of qualitative studies (Ignatzi 2014; Kałwa 2010; Metz-Göckel et al. 2010). We set net monthly earnings of €1,300 as the highest category because this was the minimum amount required to pay the German minimum wage for a full-time job at the time our data were collected.

Figure 3 also shows that agency live-ins were more likely to have their travel costs covered than nonagency live-ins (more than 80% compared to around 45%). Yet this additional benefit may not prove all that beneficial in practice. For instance, Chau/Schwiter (2021) found that while agencies tended to offer free bus trips between Switzerland and live-ins' home countries, these bus trips were not popular among migrant live-ins, as they were usually inflexible in dates and times and took much longer than other means of transportation.

Regarding the issue of working hours and breaks, we again found that agency care workers are more likely to be better off than nonagency workers (see Figure 4). While 33% of agency

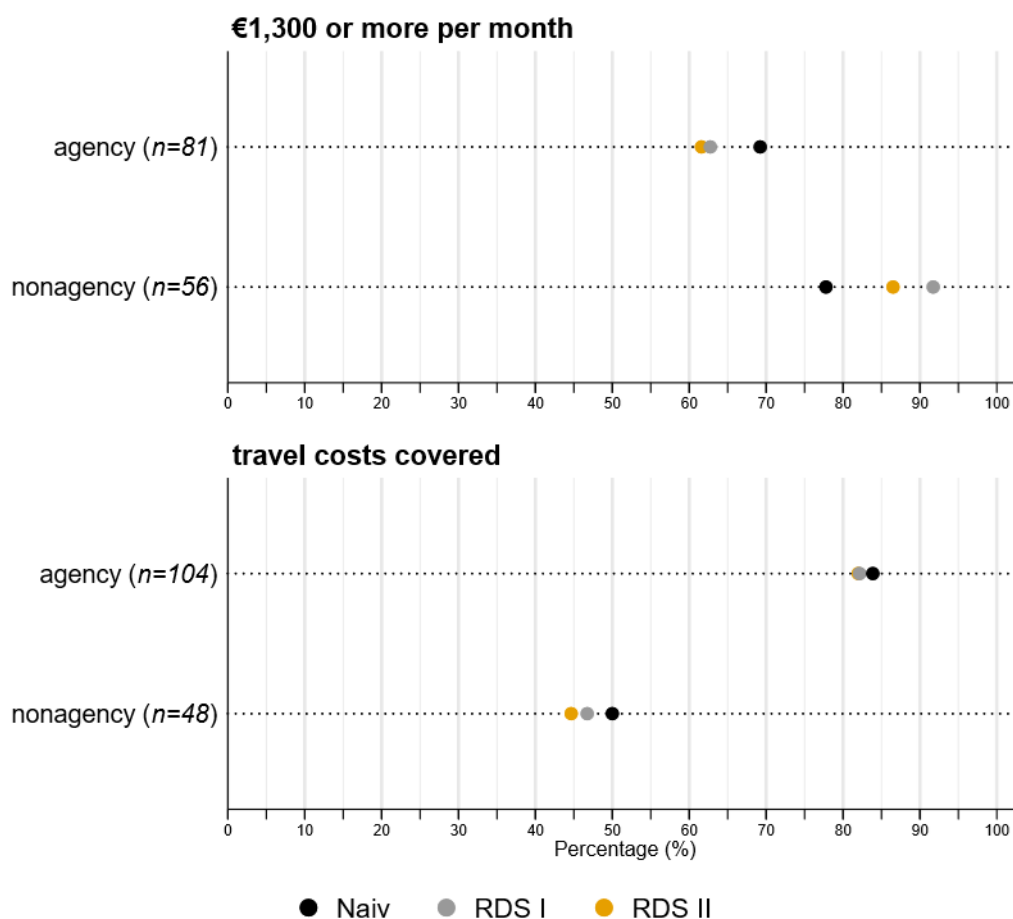
live-ins reported having less than two hours of breaks per day, 50% of nonagency live-ins reported having such short breaks. In addition, agency live-ins were less likely than nonagency live-ins to assist the person they live with at night (less than 30% vs. less than 40%) and less likely to have no day off per week (around 55% versus around 70%).

Figure 2: Proportion of agency vs. nonagency live-ins who are satisfied with various life domains



Note: To capture the proportion of live-ins who are “satisfied” with the above-mentioned aspects, we collapsed the two/three highest agreement values on the five-/ten-point agreement scales respondents were presented with. All observations are used to estimate proportions (including those before equilibrium was reached).

Figure 3: Proportion of agency vs. nonagency live-ins who earn monthly wages above €1,300 and whose travel costs are covered



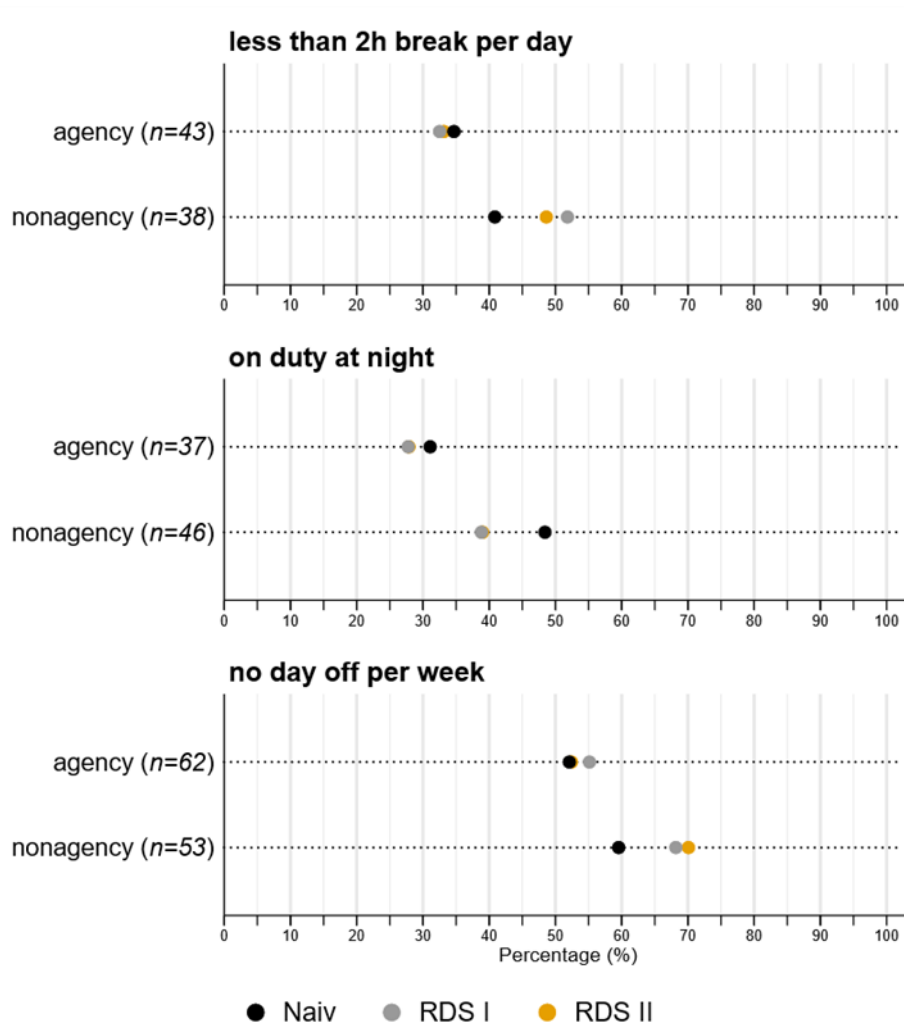
Note: All observations are used to estimate proportions (including those before equilibrium was reached).

There are some possible explanations for these findings. First, agency contracts may be more specific about working hours than direct contracts between households and nonagency live-ins. Second, agency live-ins can report violations of working-time regulations to the agency, which in turn communicates these problems back to the client. However, even though agency live-ins had better working times than nonagency live-ins, their working times were not compliant with German labor protection laws. Note that our estimates might be lower bounds, as live-ins who have even shorter breaks may have been less likely to participate in our study.

Differences in live-ins’ backgrounds in care training were comparatively small (see Figure 5). Fairly high proportions of Polish agency and nonagency live-ins in Berlin stated that they had no medical qualifications (around 45% versus around 50%). While greater proportions of

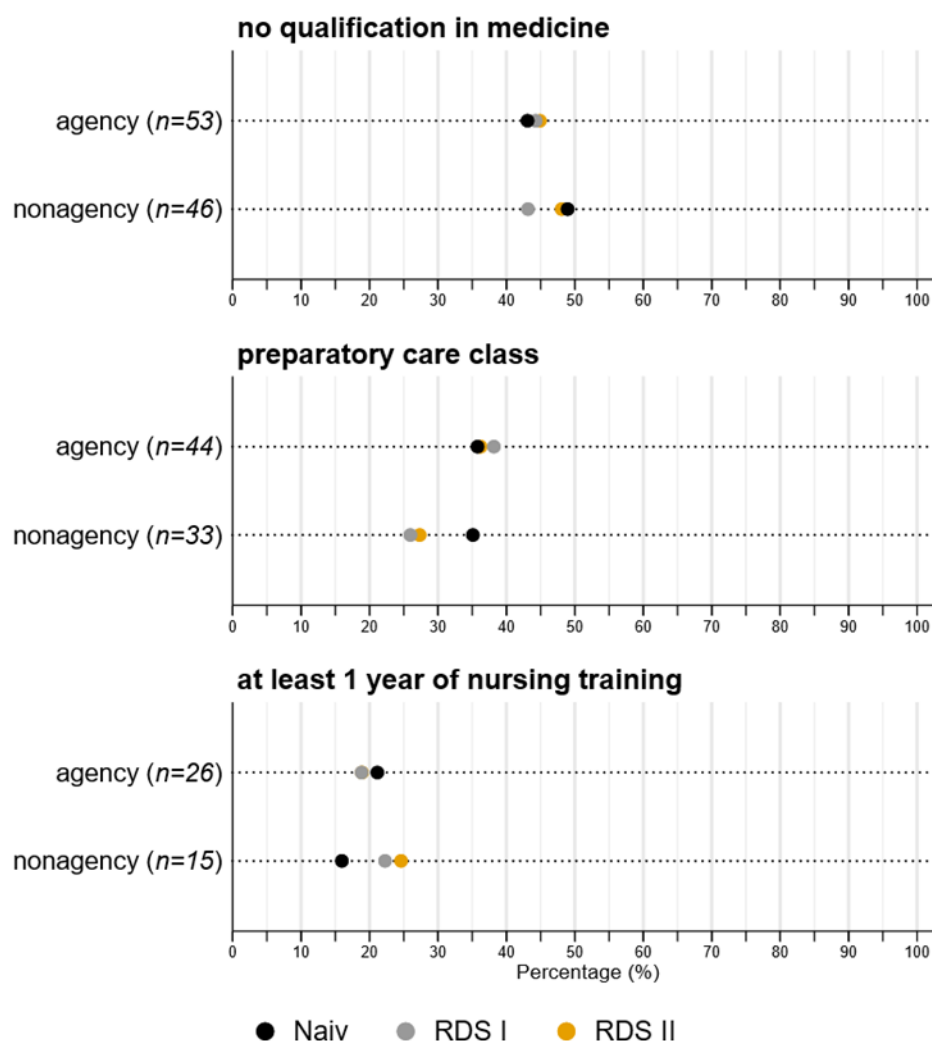
agency live-ins had attended preparatory care classes than nonagency live-ins (a little less than 40% versus a little less than 30%), fewer agency live-ins had completed at least one year of nursing training (a little less than 20% compared to slightly more than 20% among nonagency workers). These differences can be explained by the fact that care agencies, or at least the larger ones, tend to offer training for employees and contractors without a nursing background (Lietzke/Petermann 2023). By contrast, self-employed live-ins and live-ins with a direct (written or verbal) contract with the private household may be more likely to get their jobs due to their background in nursing.

Figure 4: Proportion of agency vs. nonagency live-ins with only short daily breaks, care duties at night, and less than one day off per week



Note: All observations are used to estimate proportions (including those before equilibrium was reached).

Figure 5: Proportion of agency vs. nonagency live-ins with different medical backgrounds

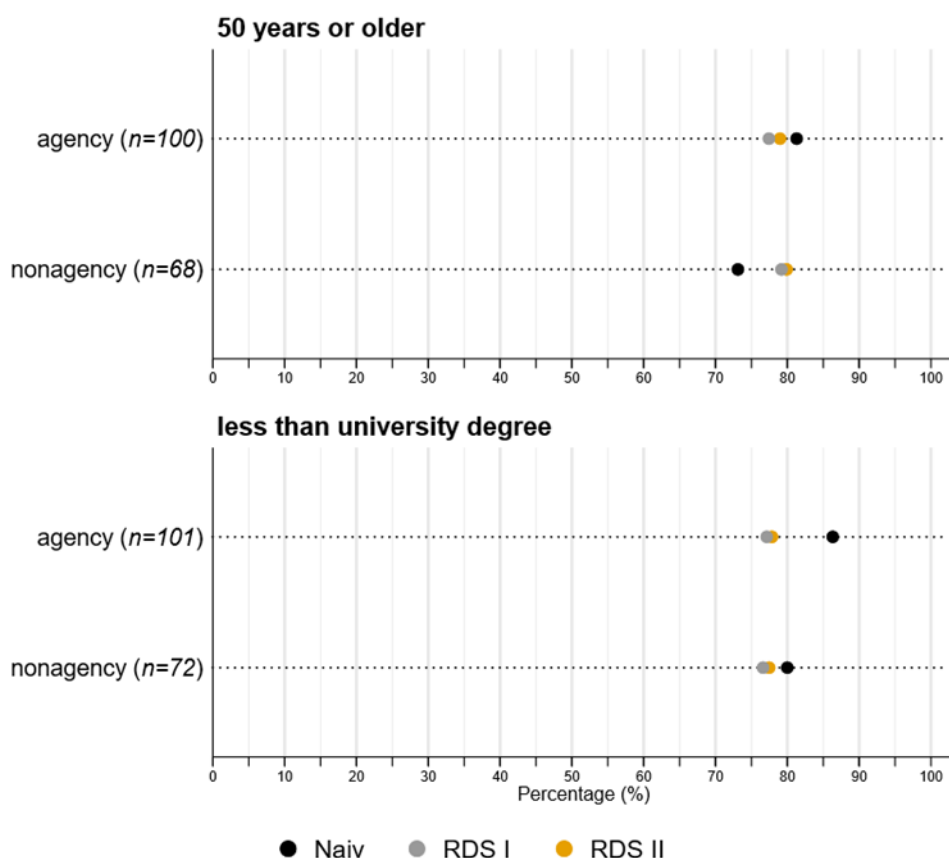


Note: All observations are used to estimate proportions (including those before equilibrium was reached).

To account for the fact that migrant live-in care workers do not randomly select into the different employment arrangements, we also examined whether there were systematic socio-demographic differences between agency and nonagency live-in care workers. It was particularly important to conduct this examination to assess whether potential differences in the economic and subjective well-being of live-in care workers were due to differential selection into different types of contracts or whether different types of contractual arrangements may indeed be causally related to different outcomes. Figure 6 shows that there were no differences, or only small ones, in the age and educational distribution between agency and nonagency live-ins. In both groups around 80% were 50 years of age and older and had less than a university degree (ISCED 6-8). The fact that we did not find stark differences in the age distribution and educational background by type of work arrangement suggests that there was no systematic selectivity into these different types of working arrangements.



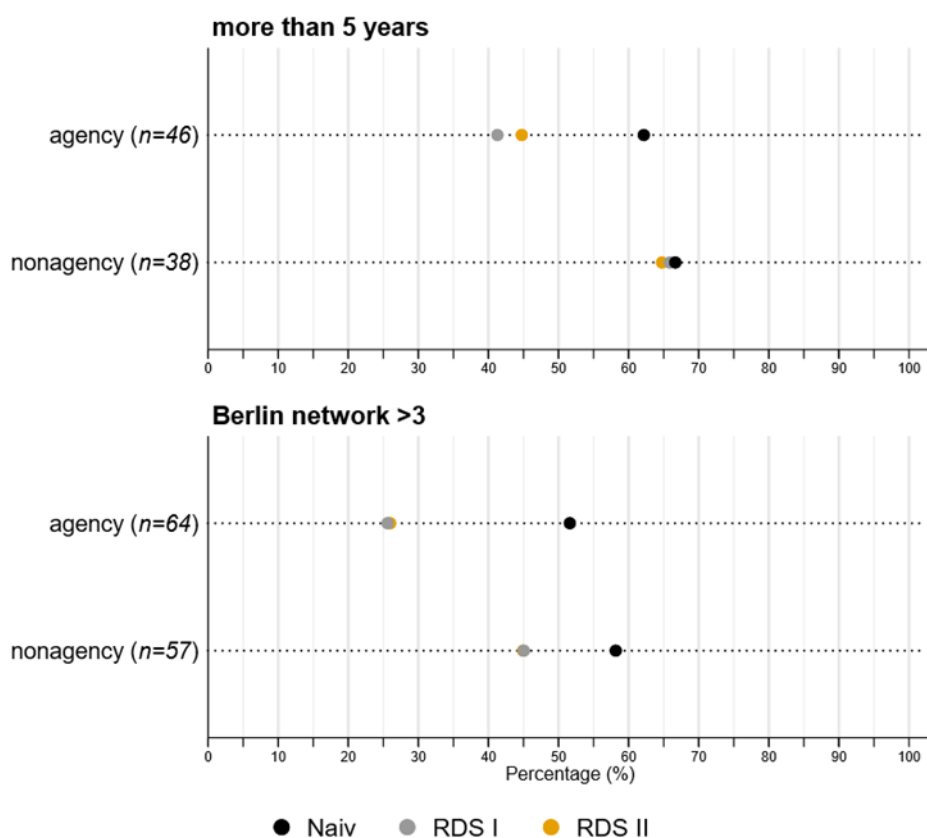
Figure 6: Proportion of agency vs. nonagency live-ins in different age groups and without tertiary education



Note: All observations are used to estimate proportions (including those before equilibrium was reached).

Lastly, we investigated differences between agency and nonagency workers in the time elapsed since they had their first job in Germany and their average network size. Both measures were also useful for assessing potential selectivity into different contractual agreements. Figure 7 shows that fewer agency than nonagency live-ins had been working in Germany for more than 5 years (around 45% versus around 65%). Likewise, agency careworkers were less likely than nonagency workers to know more than three other live-in care workers in Berlin (25% versus 45%). These differences indeed point to some selectivity in working via an agency or not and can be explained by the fact that nonagency live-ins require better language skills and greater networks than agency live-ins: Language skills and live-in care work experience increase job opportunities. Good language skills also make contract negotiations easier. Individuals are more likely to possess both work experience and language skills after several years in the live-in business. Moreover, nonagency live-ins need a network of other live-ins to act as substitutes in case of illness or vacation. As live-in care positions are prone to ending abruptly—e.g., because the client dies or has to go into hospital, nonagency live-ins also need to know a lot of possible employers. All of this is more likely to be the case after some years in the live-in business.

Figure 7: Proportion of agency vs. nonagency live-ins who had been in Germany for more than five years and have a network > 3 other live-ins in Berlin



Note: All observations are used to estimate proportions (including those before equilibrium was reached).

### Robustness Checks

To assess the robustness of our results and account for the great variation that may exist between different types of care agencies, we performed additional analyses. First, we checked whether our coding decision to classify live-ins with a (registered) business in Poland or Germany and a (placement) contract with a care agency without receiving working instructions from this agency as “nonagency live-ins” ( $n=10$ ) affected our results. Consequently, we reran all analyses when coding these 10 observations as “agency workers.” The results of these additional analyses are shown in the Appendix Table A3. Essentially, we do not see any substantial differences in the results with the changed coding. The only exception is the satisfaction with family life (the proportion of those nonagency live-ins who are happy with their family lives increases by around 10 percentage points for both the RDS I and RDS II estimator).

In a second step, we reran our analyses to examine potential within-agency variation in live-ins working and living conditions. In these analyses, we distinguish between those live-ins who are directly employed by a care agency ( $n=74$ , Category 1 in Table 1) and those with other types

of agency contracts (n= 60, Category 2, 3, and 7). The results in the Appendix Figures A1–A3 show that live-ins who are directly employed with a care agency are as or even more likely to report positive outcomes for most of the variables examined in our analyses than live-ins with other types of agency contracts. The only exception to this concerns the live-in’s likelihood of being (very) satisfied with their relationship with the client’s relatives.

## Conclusions

To examine how employment policies and regulations affect 24-hour migrant care workers’ living and working conditions, we collected and analyzed original survey data on Polish live-ins in Berlin using respondent-driven sampling (N=222). Because Poland is geographically and culturally proximate to Germany, Polish live-in care workers likely constitute one of the largest groups of live-in care workers in Germany (Becker et al. 2021; Ignatzi 2014).

Distinguishing between live-ins who worked for agencies and those who did not, we find that, compared to nonagency workers, agency live-ins tend to report greater satisfaction with their lives in general, with their general standard of living, and with their relationship with their families back in Poland as well as with their clients and their clients’ relatives in Germany. Yet the proportion of agency live-ins who are happy with their earnings is lower than that of nonagency workers. Our analysis of agency and nonagency live-ins’ working conditions helps explain these findings. Nonagency live-ins in Berlin are considerably more likely than agency live-ins to earn more than the minimum wage for a full-time job (€8.50 per hour was the minimum wage when we started data collection), whereas greater proportions of agency live-ins report longer breaks and getting one day off per week.

Several implications can be derived from our empirical analyses. The fact that agency care workers are more likely to be happy or very happy with several aspects of their lives and work and also report better working conditions (apart from pay) suggests that care agencies may have positive effects on migrant live-in care workers’ working lives. Care agencies reduce live-ins’ dependency on a particular client or their family by helping with communication, negotiating the employment contract, and providing emotional and legal support. Care agencies may also have a positive effect on migrant live-in care workers’ working lives by improving the match between the live-in and their clients. This is particularly important given the close and often intimate relationships care workers in private households have with their clients. What’s more, agency live-ins are not lone wolves. The large number of live-ins who work for the same agency in Germany allows—at least theoretically—for substitution arrangements during vacation time and sick leave and could also facilitate the establishment of training programs for care or language skills. Networks of colleagues working with the same care agency provide practical and emotional support.

Care agencies can, however, only fully realize this potential if they are not overly profit seeking. Our analyses showed that agency live-ins were more likely than nonagency live-ins to have earnings below the minimum wage at the time of our study. As profit-seeking organizations, care agencies need to get paid for their services to care workers and care recipients, and this tends to reduce the scope for spending on care workers’ wages. Moreover, earnings pressure

prevents care agencies from offering more and better services (e.g., in terms of training or German language classes). The provision of such public goods makes poaching more likely—i.e., workers may switch to jobs that pay better wages once they have acquired qualifications. Generally requiring care agencies to be nonprofit would prevent such common good problems and would create incentives for better working conditions. Our analyses, moreover, show that there is also quite some variation within care agencies. Live-ins who are directly employed by a care agency fare better on most outcomes than live-ins on other agency contracts. The implication of this finding is that care agencies that do not employ live-ins but only help with the placement may not necessarily be beneficial for live-ins. When live-ins are self-employed, neither the private household nor the care agency can be held accountable if minimum wage requirements and specifications regarding maximum working hours are violated. Care agencies should be offered incentives to improve working conditions for live-ins and to adhere to quality standards. This would be important for at least two reasons: First, merely imposing more legal regulations on live-in care employment does not automatically lead to better working conditions, as the example of the Austrian live-in model has proven (e.g., Aulenbacher/Leiblfinger/Prieler 2020; Österle/Bauer 2016). Second, bad working conditions may harm live-ins' health and quality of care and thereby the health and well-being of care recipients (Green/Ayalon 2018).

Before concluding, we would like to discuss several limitations of our study. First, the results of our analyses only apply to Polish live-in care workers in Berlin. Although our results may plausibly be generalized to other areas of Germany and other migrant groups, this restriction should be kept in mind when interpreting our findings. In particular, the working and living situations of live-in care workers from outside the European Union may differ from those of Polish live-in care workers in Berlin; care workers from non-EU countries face additional obstacles and challenges when it comes to residence permits and travelling.

Second, due to the very limited sample size ( $N=222$ ), all our estimates are very uncertain (see the width of the bootstrapped confidence intervals in Table A2 in the Appendix). More importantly, due to the small sample size, we were only able to distinguish between agency and nonagency workers in our analysis. We are, however, fully aware that both categories can capture very different types of employment arrangements. For instance, some care agencies may be actual employers while others may be agencies that only provide minimal protection and services to live-in workers (e.g., Leiber and Rossow 2022; Leiber et al. 2020; Schwiter, Berndt, and Schilling 2014). What's more, our nonagency worker category included live-ins who were directly employed by a German household, self-employed live-ins who had a service contract with the employer, and live-ins without any contract at all. Therefore, there is likely also great within-group variation among both agency and nonagency care workers in our study that we cannot capture.

Third, although we did our best to meet all the assumptions required to obtain unbiased estimates from RDS data—i.e., that the network structure is symmetric and that there are no hidden or isolated subgroups in the population of interest (network assumptions), that participants provide reliable information about their network size and randomly recruit additional respondents from their person network (assumptions regarding respondent behavior), and that sampling occurs with replacement (sampling assumption) —we cannot, of course, guarantee that all of these assumptions were (consistently) met throughout the data collection process.

We could, for instance, not always ensure that respondents randomly recruited from their networks. However, given that most participants in our study all had small networks, random recruitment was not necessary in most instances. Moreover, due to limited resources, we did not allow for sampling with replacement, i.e., the possibility that live-ins could participate in the study multiple times. To address the potential biases, we displayed the results from two different RDS estimators. Lastly, although we do not have evidence that there are systematic differences in selection into the different types of working arrangements in our sample (as our comparison of various sociodemographic characteristics of agency and nonagency workers suggest), our data do not allow us to draw causal conclusions about the effects of different types of employment arrangements on live-in care workers' economic and subjective well-being.

Despite these limitations, however, our study contributes to the growing literature on live-in care workers by providing more reliable estimates than previous studies, which either conducted qualitative interviews with a small number of purposively sampled live-ins (e.g., Emunds/Schacher 2012; Ignatzi 2014; Karakayali 2010; Kniejska 2016; Satola 2015) or used nonprobability samples that precluded generalizable contributions (e.g., Bartig et al. 2022; Becker 2023; Becker/Komitowski 2022; Hielscher et al. 2017; Isfort/Von der Malsburg 2014; Petermann et al. 2017). We acknowledge, however, that the findings of our study only deviate from what previous work suggested in a few respects. For instance, we found higher proportions of live-in care workers who received wages above the minimum wage for full-time care workers at the time of data collection than suggested by previous, qualitative work (Ignatzi 2014; Kałwa 2010; Metz-Göckel 2010). By graphically indicating the differences between the two RDS estimator and a "naïve," unweighted estimator, we have illustrated the bias of estimators that do not account for the sampling method of the data. Lastly, by applying RDS to the group of migrant live-in care workers, which can be regarded as a hard-to reach population (Hipp/Kohler/Leumann 2019), our study may inspire researchers to also apply this sampling method to other small and potentially hidden migrant populations.

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### References

- Abdesselam, Kahina, Ashton Verdery, Linda Pelude, Parminder Dhama, Franco Momoli and Ann M. Jolly (2020). The Development of Respondent-Driven Sampling (RDS) Inference: A Systematic Review of the Population Mean and Variance Estimates. *Drug and Alcohol Dependence* 206. (DOI: <https://doi.org/10.1016/j.drugalcdep.2019.107702>)
- Amorosi, Lucia (2024). Brokering Agencies as Managers of Conflicts and Emotions in Live-in Senior Care. In: Brigitte Aulenbacher, Helma Lutz, Ewa Palenga-Möllnbeck, and Karin Schwiter (Hg.). *Home care for sale: the transnational brokering of senior care in Europe*. London: Sage, 173–87.
- Anderson, A. (2012). Europe’s Care Regimes and the Role of Migrant Care Workers Within Them. *Journal of Population Ageing* 5(2), 135–146. (DOI: <https://doi.org/10.1007/s12062-012-9063-y>)
- Aulenbacher, Brigitte, Michael Leiblfinger and Veronika Prieler (2020). The Promise of decent Care and the Problem of poor Working Conditions. Double Movements around Live-In Care in Austria. *Sozialpolitik.Ch* 2020(2), 1–21. (DOI: <https://doi.org/10.18753/2297-8224-160>).
- Aulenbacher, Brigitte, Helma Lutz and Karin Schwiter (2021). *Gute Sorge ohne gute Arbeit? Live-in-Care in Deutschland, Österreich und der Schweiz*. Weinheim: Beltz Juventa.
- Aulenbacher, Brigitte, Veronika Prieler and Michael Leiblfinger (2021). Das umstrittene Selbstständigenmodell - Live-in-Betreuung in Österreich. In: Brigitte Aulenbacher, Helma Lutz, and Karin Schwiter (Hg.). *Gute Sorge ohne gute Arbeit? Live-in-Care in Deutschland, Österreich und der Schweiz*. Wien: Beltz Juventa, 66–78.
- Ayalon, Liat (2022). The Global Care Network and Its Impact on Sending and Receiving Countries: Current Knowledge and Future Directions. *Ageing and Society* 42(10), 2244–61. (DOI: <https://doi.org/10.1017/S0144686X21000027>)

- Balkaran, Kevin, Janice Linton, Malcolm Doupe, Kerstin Roger and Christine Kelly (2023). Research on Abuse in Home Care: A scoping Review. *Trauma, Violence, & Abuse* (25)2, 885–897. (DOI: <https://doi.org/10.1177/15248380231165922>)
- Bartig, Susanne, Niklas Harder, Mathis Herpell and Magdalena Nowicka (2022). Harter Job in schweren Zeiten zur Arbeits- und Lebenssituation polnischer Betreuungskräfte älterer Menschen in Deutschland während der Coronapandemie. Deutsches Zentrum für Integrations- und Migrationsforschung DeZIM e.V., Berlin.
- Becker, Karina (2016). Live-in and Burn-out?: Migrantische Pflegekräfte in deutschen Haushalten. *Arbeit* 25(1–2), 21–45. (DOI: <https://doi.org/10.1515/arbeit-2016-0023>)
- Becker, Paul (2023). Die „vierte Säule“ der Pflege - Aktuelle Bedarfe und Erwartungen von 24-Stunden-Betreuungskräften (Live-Ins) in Bezug auf ihre Arbeit in Deutschland. *Studie 05/2023*. Minor - Projektkontor für Bildung und Forschung gGmbH, Berlin.
- Becker, Paul, Christiane Fritsche and Doritt Komitowski (2021). 24-Stunden-Pflegekräfte aus den Staaten außerhalb der EU. *Working Paper 07/2021*. Minor - Projektkontor für Bildung und Forschung GmbH, Berlin.
- Becker, Paul and Doritt Komitowski (2022). Tragende Säule bröckelnder Versorgungssicherheit ohne regulären Untergrund - Situation und zukünftige Entwicklung in der ambulanten Pflege und die Perspektive von Betreuerinnen aus der 24-Stunden-Betreuung (Live-Ins) auf die Pflegesituation vor Ort. *Working Paper 10/2022*. Minor - Projektkontor für Bildung und Forschung gGmbH, Berlin.
- Benazha, Aranka Vanessa (2021). Alles rechtens? Rechtliche Rahmenbedingungen der Live-in-Betreuung in Deutschland. In: Brigitte Aulenbacher, Helma Lutz, and Karin Schwiter (Hg.). *Gute Sorge ohne gute Arbeit? Live-in-Care in Deutschland, Österreich und der Schweiz*. Weinheim: Beltz Juventa, 46–65.
- Blau, Peter Michael (1964). *Exchange and Power in Social Life*. New York Wiley.
- Bucher, Barbara (2018). *Rechtliche Ausgestaltung der 24-h-Betreuung durch ausländische Pflegekräfte in deutschen Privathaushalten: Eine kritische Analyse*. Baden-Baden: Nomos.
- Chau, Huey Shy and Karin Schwiter (2021). Who shapes Migration in open Labour Markets? Analysing Migration Infrastructures and Brokers of circularly migrating Home Care Workers in Switzerland. *Mobilities* 16(5), 724–38. (DOI: <https://doi.org/10.1080/17450101.2021.1971052>)
- Drepper, Daniel (2016). Pflegekräfte: Sklavinnen, die uns pflegen. *Zeit Online*. Retrieved August 21, 2023 from <https://www.zeit.de/wissen/gesundheit/2016-08/pflegekraefte-bundesregierung-osteuropa-illegal-hausangestellte>.
- Ehrlich, Ulrike and Nadiya Kelle (2019). Pflegende Angehörige in Deutschland: Wer pflegt, wo, für wen und wie? *Zeitschrift für Sozialreform* 65(2), 175–203. (DOI: <https://doi.org/10.1515/zsr-2019-0007>)
- Emerson, Richard M (1972a). Exchange Theory Part I: A psychological Basis for social Exchange Rules and Networks. In: Joseph Berger, Morris Zelditch Jr., and Bo Anderson (Hg.). *Sociological theories in progress*. Boston, MA: Houghton-Mifflin, 38–57.
- Emerson, Richard M. (1972b). Exchange Theory Part II: Exchange Rules and Networks. In: Joseph Berger, Morris Zelditch Jr., and Bo Anderson (Hg.). *Sociological theories in progress*. Boston, MA: Houghton-Mifflin, 58–87.
- Emunds, Bernhard (2016). Menschenunwürdige Pflegearbeit in deutschen Privathaushalten. Sozialethische Bemerkungen zu den Arbeitsverhältnissen mittel- und osteuropäischer Live-Ins. In: *Sozialethik*

*der Pflege und Pflegepolitik. Vol. Band 57*, Jahrbuch für christliche Sozialwissenschaften. Münster: Aschendorff Verlag, 199–224.

- Emunds, Bernhard and Uwe Schacher (2012). Ausländische Pflegekräfte in Privathaushalten - Abschlussbericht zum Forschungsprojekt. Oswald von Nell-Breuning-Institut für Wirtschafts- und Gesellschaftsethik der Philosophisch-Theologischen Hochschule Sankt Georgen.
- England, Paula (2005). Emerging Theories of Care Work. *Annual Review of Sociology* 31(1), 381–99. (DOI: <https://doi.org/10.1146/annurev.soc.31.041304.122317>)
- Gile, Krista J., Isabelle S. Beaudry, Mark S. Handcock and Miles Q. Ott (2018). Methods for Inference from Respondent-Driven Sampling Data. *Annual Review of Statistics and Its Application* 5(1), 65–93. (DOI: <https://doi.org/10.1146/annurev-statistics-031017-100704>)
- Goel, Sharad and Matthew J. Salganik (2010). Assessing Respondent-Driven Sampling. *Proceedings of the National Academy of Sciences* 107(15), 6743–7. (DOI: <https://doi.org/10.1073/pnas.1000261107>)
- Green, Ohad and Liat Ayalon (2018). Violations of Workers' Rights and Exposure to work-related Abuse of Live-in Migrant and Live-out local Home Care Workers – a preliminary Study: Implications for Health Policy and Practice. *Israel Journal of Health Policy Research* 7(1), 32. (DOI: <https://doi.org/10.1186/s13584-018-0224-1>)
- Habel, Simone (2021). Narratives on Working Hours: An Analysis of “Pioneer” Brokering Agencies for Live-in Care Work in Germany. *Sociológia - Slovak Sociological Review* 53(5), 463–82. (DOI: <https://doi.org/10.31577/sociologia.2021.53.5.17>)
- Haberstumpf-Münchow, Christine (2020). Die Beschäftigung von polnischen Haushaltshilfen in deutschen Pflegehaushalten aus rechtlicher Perspektive. In: Barbara Städtler-Mach and Helene Ignatzi (Hg.). *Grauer Markt Pflege: 24-Stunden-Unterstützung durch osteuropäische Betreuungskräfte*. Göttingen: Vandenhoeck & Ruprecht, 11–23.
- Haidinger, Bettina (2013). Hausfrau für zwei Länder sein: Zur Reproduktion des transnationalen Haushalts. Münster: Westfälisches Dampfboot.
- Heckathorn, Douglas D. (1997). Respondent-Driven Sampling: A new Approach to the Study of Hidden Populations. *Social Problems* 44(2), 174–99. (DOI: <https://doi.org/10.2307/3096941>)
- Heckathorn, Douglas D. (2002). Respondent-Driven Sampling II: Deriving valid Population Estimates from Chain-Referral Samples of Hidden Populations. *Social Problems* 49(1), 11–34. (DOI: <https://doi.org/10.1525/sp.2002.49.1.11>)
- Heckathorn, Douglas D. and Christopher J. Cameron (2017). Network Sampling: From Snowball and Multiplicity to Respondent-Driven Sampling. *Annual Review of Sociology* 43(1), 101–19. (DOI: <https://doi.org/10.1146/annurev-soc-060116-053556>)
- Hielscher, Volker, Sabine Kirchen-Peters and Lukas Nock (2017). Pflege in den eigenen vier Wänden - Zeitaufwand und Kosten; Pflegebedürftige und ihre Angehörigen geben Auskunft. *Study Nr. 363*. Hans-Böckler-Stiftung, Düsseldorf.
- Hipp, Lena (2016). Ungleichheiten und Diskriminierung auf dem Arbeitsmarkt. *Aus Politik und Zeitgeschichte* 66(9), 42–48.
- Hipp, Lena and Nadiya Kelle (2016). Nur Luft und Liebe? Die Entlohnung sozialer Dienstleistungsarbeit im Länder- und Berufsvergleich: Expertise. Berlin: Friedrich-Ebert-Stiftung.



- Hipp, Lena, Ulrich Kohler and Sandra Leumann (2019). How to Implement Respondent-Driven Sampling in Practice: Insights from Surveying 24-Hour Migrant Home Care Workers. *Survey Methods: Insights from the Field*. (DOI: <https://doi.org/10.13094/SMIF-2019-00009>)
- Horn, Vincent, Cornelia Schweppe, Anita Böcker and María Bruquetas-Callejo (2019). Live-in Migrant Care Worker Arrangements in Germany and the Netherlands: Motivations and Justifications in Family Decision-Making. *International Journal of Ageing and Later Life* 13(2), 83–113. (DOI: <https://doi.org/10.3384/ijal.1652-8670.18410>)
- Hussein, Shereen, Agnes Turnpenny and Caroline Emberson (2024). Shaping the Social and Work-Related Well-Being of Migrant Live-in Carers: The Ambiguous Role of Labour Market Intermediaries in England. In: Brigitte Aulenbacher, Helma Lutz, Ewa Palenga-Möllnbeck, and Karin Schwiter (Hg.). *Home care for sale: the transnational brokering of senior care in Europe*. London: Sage, 202–18.
- Ignatzi, Helene (2014). *Häusliche Altenpflege zwischen Legalität und Illegalität: Dargestellt am Beispiel polnischer Arbeitskräfte in deutschen Privathaushalten*. Berlin Münster: LIT.
- Isfort, Michael and Andrea Von der Malsburg (2014). Heraus aus der Grauzone - Qualitätsgesicherter Einsatz polnischer Haushaltshilfen in deutschen Familien mit pflegebedürftigen Angehörigen. Evaluation des Projektes. Deutsches Institut für angewandte Pflegeforschung e.V., Köln.
- Jacobs, Klaus, Adelheid Kuhlmeier, Stefan Greß, Jürgen Klauber and Antje Schwinger (Hg.) (2020). *Pflege-Report 2020: Neuausrichtung von Versorgung und Finanzierung*. Berlin: Springer Open.
- Kałwa, Dobrochna (2010). Migration Polnischer Frauen in Privathaushalte der BRD. In: Sigrid Metz-Göckel, A. Senganata Münt, and Dobrochna Kałwa (Hg.). *Migration als Ressource: Zur Pendelmigration polnischer Frauen in Privathaushalte der Bundesrepublik*. Verlag Barbara Budrich, 61–176.
- Karakayali, Juliane (2010). *Transnational Haushalten: Biographische Interviews mit Care Workers aus Osteuropa*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Kniejska, Patrycja (2016). *Migrant Care Workers aus Polen in der häuslichen Pflege - Zwischen familiärer Nähe und beruflicher Distanz*. Wiesbaden: Springer Fachmedien.
- Kocher, Eva and Nastazja Potocka-Sionek (2022). Rechtsfragen beim Einsatz polnischer Betreuungskräfte (Live-Ins) in Deutschland durch Vermittlung polnischer Agenturen. Europa-Universität Viadrina, Center for Interdisciplinary Labour Law Studies, Frankfurt (Oder).
- Kriegsmann-Rabe, Milena, Katja Maus, Nina Hiebel, Constantin Klein and Franziska Geiser (2023). Live-in Migrant Home Care Workers in Germany: Stressors and resilience Factors. *PLoS ONE* 18(3): e0282744. (DOI: <https://doi.org/10.1371/journal.pone.0282744>)
- Larsen, Christa, Angela Joost and Sabine Heid (Hg.) (2009). *Illegale Beschäftigung in Europa: Die Situation in Privathaushalten älterer Personen = Illegal employment in Europe: The Situation in private Homes of the Elderly*. München: b Hampp.
- Lawler, Edward J. and Lena Hipp (2010). Corruption as Social Exchange. In: Shane R. Thye and Edward J. Lawler (Hg.). *Advances in Group Processes Vol. 27*. Emerald Group Publishing Limited, 269–96.
- Lee, Sunghee, Tuba Suzer-Gurtekin, James Wagner and Richard Valliant (2017). Total Survey Error and Respondent Driven Sampling: Focus on Nonresponse and Measurement Errors in the Recruitment Process and the Network Size Reports and Implications for Inferences. *Journal of Official Statistics* 33(2), 335–66. (DOI: <https://doi.org/10.1515/jos-2017-0017>)

- Leiber, Simone and Verena Rossow (2022). *Beschäftigung von Migrantinnen in der sogenannten „24-Stunden-Betreuung“ in Privathaushalten*. Expertise im Auftrag des Sachverständigenrats für Integration und Migration für das SVR-Jahresgutachten 2022. Berlin.
- Leiber, Simone, Verena Rossow and Timm Frerk (2020). *Das Geschäft mit der Sorge: Unternehmen im Feld der sogenannten 24-Stunden-Pflege*. Friedrich-Ebert-Stiftung, Abteilung Wirtschafts- und Sozialpolitik, Bonn.
- Lietzke, Ronald and Arne Petermann (2023). *Qualifizierungsstandard Für Betreuungspersonen in Häuslicher Gemeinschaft Nach §45c Abs 3 Und 3a SGB XI*. Verband Für Häusliche Betreuung Und Pflege (VHBP) e.V. (vhbp.de). Retrieved August 31, 2023 from <https://www.vhbp.de/fileadmin/Downloads/Qualifizierungsstandard20BetreuungspersonenA4uslicherGemeinschaft%20nachC74520Abs0320und203a20SGB20XI.pdf>.
- Lutz, Helma (2009). Who Cares? Migrantinnen in der Pflege in deutschen Privathaushalten. In: Christa Larsen, Angela Joost, and Sabine Heid (Hg.). *Illegale Beschäftigung in Europa: Die Situation in Privathaushalten älterer Personen*. München/Mering: Rainer Hampp Verlag, 41–50.
- Metz-Göckel, Sigrid (2010). Arbeitspendeln und Lebensarbeit. In: Sigrid Metz-Göckel, A. Senganata Münst, and Dobrochna Kałwa (Hg.). *Migration als Ressource: Zur Pendelmigration polnischer Frauen in Privathaushalten der Bundesrepublik*. Verlag Barbara Budrich, 27–60.
- Metz-Göckel, Sigrid, Agnes Senganata Münst and Dobrochna Kałwa (2010). *Migration als Ressource: Zur Pendelmigration polnischer Frauen in Privathaushalten der Bundesrepublik*. Opladen & Farmington Hills: B. Budrich.
- OECD and European Union (2022). *Health at a Glance: Europe 2022: State of Health in the EU Cycle*. OECD.
- Österle, August and Gudrun Bauer (2016). The Legalization of Rotational 24-Hour Care Work in Austria: Implications for Migrant Care Workers. *Social Politics: International Studies in Gender, State & Society* 23(2), 192–213. (DOI: <https://doi.org/10.1093/sp/jxv001>)
- Palenga-Möllnbeck, Ewa (2013a). Care Chains in Eastern and Central Europe: Male and female domestic Work at the Intersections of Gender, Class, and Ethnicity. *Journal of Immigrant & Refugee Studies* 11(4), 364–83. (DOI: <https://doi.org/10.1080/15562948.2013.822955>)
- Palenga-Möllnbeck, Ewa (2013b). New Maids–New Butlers? Polish Domestic Workers in Germany and Commodification of Social Reproductive Work. *Equality, Diversity and Inclusion: An International Journal* 32(6), 557–74.
- Petermann, Arne, Tobias Ebbing and Michael Paul (2017). *Das Tätigkeitsprofil von Betreuungspersonen in häuslicher Gemeinschaft*. Berufsakademie für Gesundheits- und Sozialwesen Saarland, Saarbrücken.
- Petermann, Arne, Giorgio Jolly and Katharina Schrader (2020). Fairness und Autonomie in der Betreuung in häuslicher Gemeinschaft - Ergebnisse einer empirischen Studie. In: Barbara Städtler-Mach and Helene Ignatzi (Hg.). *Grauer Markt Pflege: 24-Stunden-Unterstützung durch osteuropäische Betreuungskräfte*. Göttingen: Vandenhoeck & Ruprecht, 99–121.
- Phan-Warnke, Lê and Nora Freitag (2021). Ending Live-in Care Workers' Labour Exploitation in the European Union Lessons from Germany. Deutsches Institut für Menschenrechte, Berlin.
- Salami, Bukola, Wendy Duggleby and Fahreen Rajani (2017). The Perspective of Employers/Families and Care Recipients of Migrant Live-in Caregivers: A scoping Review. *Health & Social Care in the Community* 25(6), 1667–78. (DOI: <https://doi.org/10.1111/hsc.12330>)

- Satola, Agnieszka (2015). *Migration und irreguläre Pflegearbeit in Deutschland: Eine biographische Studie*. Stuttgart: ibidem Verl.
- Schabram, Greta and Nora Freitag (2022). *Harte Arbeit, wenig Schutz: Osteuropäische Arbeitskräfte in der häuslichen Betreuung in Deutschland*. Deutsches Institut für Menschenrechte, Berlin.
- Schilgen, Benjamin, Katja Savcenko, Albert Nienhaus and Mike Mösko (2020). Arbeitsplatzbezogene Belastungen und Ressourcen von ausländischen 24-Stunden-Betreuungskräften in deutschen Privathaushalten – eine qualitative Studie. *Das Gesundheitswesen* 82(02), 196–201. (DOI: <https://doi.org/10.1055/a-1005-7024>)
- Schilliger, Sarah (2014). *Pflegen ohne Grenzen? Polnische Pendelmigrantinnen in der 24h-Betreuung. Eine Ethnographie des Privathaushalts als globalisiertem Arbeitsplatz*. Dissertation. Universität, Basel. Philosophisch-Historische Fakultät.
- Schwiter, Karin, Berndt Christian, and Linda Schilling (2014). Ein sorgender Markt. Wie transnationale Vermittlungsagenturen für Seniorenbetreuung Im/mobilität, Ethnizität und Geschlecht in Wert setzen. *Geographische Zeitschrift* 102(4), 212-231. (DOI: <https://doi.org/10.5167/UZH-105336>)
- Schwiter, Karin, Christian Berndt and Jasmine Truong (2018). Neoliberal Austerity and the Marketisation of Elderly Care. *Social & Cultural Geography* 19(3), 379–99. (DOI: <https://doi.org/10.1080/14649365.2015.1059473>)
- Schwiter, Karin and Jennifer Steiner (2021). Live-in-Betreuer\*innen als Angestellte – Der Fall Schweiz. In: Brigitte Aulenbacher, Helma Lutz, and Karin Schwiter (Hg.). *Gute Sorge ohne gute Arbeit? Live-in-Care in Deutschland, Österreich und der Schweiz*. Wien: Beltz Juventa, 79–91.
- Schwiter, Karin and Anahi Villalba Kaddour (2024). Fair Care? On the Prospects of (and Limits to) Implementing ‘Fairness’ in Live-in Care. In: Brigitte Aulenbacher, Helma Lutz, Ewa Palenga-Möllenbeck, and Karin Schwiter. *Home care for sale: the transnational brokering of senior care in Europe*. London: Sage, 249–62.
- Shore, Lynn McFarlane and Lois E. Tetrick (1994). The psychological Contract as an explanatory Framework in the employment Relationship. In: Cary L. Cooper and Denise M. Rousseau (Hg.) *Trends in organizational Behavior Vol. 1*. John Wiley & Sons, 91–109.
- Shutes, Isabel and Carlos Chiatti (2012). Migrant labour and the marketisation of care for older people: The employment of migrant care workers by families and service providers. *Journal of European Social Policy*, 22(4), 392–405. (DOI: <https://doi.org/10.1177/0958928712449773>)
- Städtler-Mach, Barbara and Markus Bünemann (2023). Osteuropäische Betreuungskräfte in der häuslichen Pflege: Versorgung verantwortlich und fair gestalten. Vandenhoeck & Ruprecht, Göttingen.
- Statistisches Bundesamt (Destatis) (2022). *Pflegestatistik - Pflege im Rahmen der Pflegeversicherung - Deutschlandergebnisse*.
- Steiner, Jennifer, Veronika Prieler, Michael Leiblfinger and Aranka Benazha (2019). Völlig legal!? Rechtliche Rahmung und Legalitätsnarrative in der 24h-Betreuung in Deutschland, Österreich und der Schweiz. *Österreichische Zeitschrift für Soziologie* 44(1), 1–19 (DOI: <https://doi.org/10.1007/s11614-019-00337-4>)
- Stolterfoht, Barbara and Anke Martiny (2013). Transparenzmängel, Betrug und Korruption im Bereich der Pflege und Betreuung - Schwachstellenanalyse von Transparency Deutschland. *Transparency International Deutschland e.V.*

- Theobald, Hildegard and Matteo Luppi (2018). Elderly Care in changing Societies: Concurrences in divergent Care Regimes – a Comparison of Germany, Sweden and Italy. *Current Sociology* 66(4), 629–42. (DOI: <https://doi.org/10.1177/0011392118765232>)
- Wejnert, Cyprian (2009). 3. An Empirical Test of Respondent-Driven Sampling: Point Estimates, Variance, Degree Measures, and Out-of-Equilibrium Data. *Sociological Methodology* 39(1), 73–116. (DOI: <https://doi.org/10.1111/j.1467-9531.2009.01216.x>)
- Wirtz, Andrea L., Shruti H. Mehta, Carl Latkin, Carla E. Zelaya, Noya Galai, Alena Peryshkina, Vladimir Mogilnyi, Petr Dzhigun, Irina Kostetskaya and Chris Beyrer (2016). Comparison of Respondent Driven Sampling Estimators to Determine HIV Prevalence and Population Characteristics among Men Who Have Sex with Men in Moscow, Russia. *PLoS ONE* 11(6): e0155519. (DOI: <https://doi.org/10.1371/journal.pone.0155519>)

## Appendix

*Table A1: Consecutive question to collect respondents' network size*

	Original wording (Polish)	English translation
1	Ile osób zna Pani/Pan, które tak jak Pani/Pan pracują w 24-godzinnej opiece? (Podaj szacunkową liczbę, jeśli nie znasz dokładnej liczby)	How many people do you know who, like you, work in 24-hour care? (Please estimate if you don't know the exact number)
2	Ilu z tych 24-godzinnych opiekunów pochodzi z Polski wzgl. ma tam jeszcze ich miejsce zamieszkania?	How many of these 24-hour caregivers are from Poland, and how many still reside there?
3	Ilu z tych 24-godzinnych opiekunów opiekunów pracuje w Berlinie?	How many of these 24-hour caregivers work in Berlin?
4	I ile z tych osób spotkała Pani/spotkał Pan w ostatnich 2 miesiącach?	And how many of these individuals have you met in the last 2 months?

*Table A2: 95% confidence intervals for point estimates of all variables of interest based on the naïve estimator*

Variable	Employment type	Lower-bound (5th percentile)	Upper-bound (95th percentile)
life in general	agency	0.547	0.661
	nonagency	0.346	0.534
family life	agency	0.493	0.650
	nonagency	0.420	0.602
relationship with client	agency	0.812	0.926
	nonagency	0.729	0.855
relation with relatives	agency	0.750	0.885
	nonagency	0.628	0.764
living standard	agency	0.494	0.611
	nonagency	0.352	0.507
payment	agency	0.596	0.746
	nonagency	0.639	0.816
>=1300 Euro/month	agency	0.631	0.752
	nonagency	0.683	0.865
no extra travel expenses	agency	0.799	0.884
	nonagency	0.406	0.651
less than 2h break per day	agency	0.277	0.420
	nonagency	0.344	0.500
on duty at night	agency	0.234	0.393
	nonagency	0.422	0.603

no day off per week	agency	0.418	0.593
	nonagency	0.484	0.667
no qualification	agency	0.358	0.500
	nonagency	0.390	0.570
preparatory care class	agency	0.287	0.407
	nonagency	0.271	0.483
1+ year of relevant training	agency	0.167	0.277
	nonagency	0.091	0.208
50 years or older	agency	0.761	0.853
	nonagency	0.658	0.807
less than university degree	agency	0.812	0.908
	nonagency	0.762	0.898
In Germany more than 5 yrs	agency	0.519	0.676
	nonagency	0.512	0.775
Berlin network > 3	agency	0.408	0.591
	nonagency	0.482	0.610

*Note: The lower bound is the 5th percentile of the proportions estimated in each of the 300 bootstrap samples. Correspondingly the upper bound is the 95th percentile of the 300 estimated proportions.*

*Table A3: Comparison of estimated proportions of live-ins satisfaction and working conditions for the naïve, RDSI, and RDSII estimator by coding decisions for agency workers*

		Estimated proportions for original coding				Estimated proportions for alternative coding			
		naïve	RDSI	RDSII	n	naïve	RDSI	RDSII	n
Satisfaction with life in general	agency	61.0%	61.1%	60.6%	75	60.2%	61.4%	61.6%	80
	nonagency	45.3%	49.2%	46.5%	43	44.7%	48.6%	45.0%	38
Satisfaction with payment	agency	66.7%	65.4%	65.8%	82	65.4%	60.7%	61.2%	87
	nonagency	74.2%	84.5%	83.5%	69	77.1%	86.9%	88.9%	64
Satisfaction with relationship with client's relatives	agency	81.5%	86.2%	85.7%	97	79.7%	83.7%	83.3%	102
	nonagency	67.8%	53.3%	57.0%	59	69.2%	54.1%	55.4%	54
Satisfaction with relationship with client	agency	86.0%	88.0%	88.8%	98	83.9%	82.7%	83.8%	104
	nonagency	79.3%	85.3%	82.7%	73	81.7%	88.9%	83.2%	67
	agency	58.2%	58.9%	59.2%	71	56.8%	57.3%	57.5%	75

Satisfaction with family life	nonagency	50.5%	51.4%	49.2%	48	51.8%	61.4%	58.6%	44
Satisfaction with living standard	agency	56.1%	54.5%	54.4%	69	56.1%	55.4%	55.8%	74
	nonagency	41.3%	34.1%	31.6%	38	39.8%	26.2%	26.0%	33
€1,300 or more per month	agency	69.2%	62.7%	61.6%	81	69.3%	62.5%	60.5%	88
	nonagency	77.8%	91.7%	86.5%	56	.	.	.	15
Travel costs covered	agency	83.9%	82.1%	82.0%	104	79.9%	79.1%	79.1%	107
	nonagency	50.0%	46.7%	44.7%	48	52.3%	44.6%	44.6%	45
Less than 2h break per day	agency	34.7%	32.5%	33.2%	43	35.1%	31.3%	33.0%	47
	nonagency	40.9%	51.8%	48.6%	38	41.0%	48.1%	46.2%	34
On duty at night	agency	31.1%	27.8%	27.9%	37	31.8%	29.1%	29.2%	41
	nonagency	48.4%	38.8%	39.0%	46	49.4%	37.5%	36.8%	42
No day off per week	agency	52.1%	55.1%	52.4%	62	54.3%	55.9%	54.7%	70
	nonagency	59.6%	68.2%	70.1%	53	57.0%	68.8%	69.3%	45

*Note: Due to an insufficient number of observations, we cannot estimate the proportion of non-agency-live-ins' pay in the alternative coding scheme. To capture the proportion of live-ins who are "(very)satisfied" with the above mentioned aspects, we collapsed the two/three highest agreement values on the five-/ten-point agreement scales respondents were presented with.*

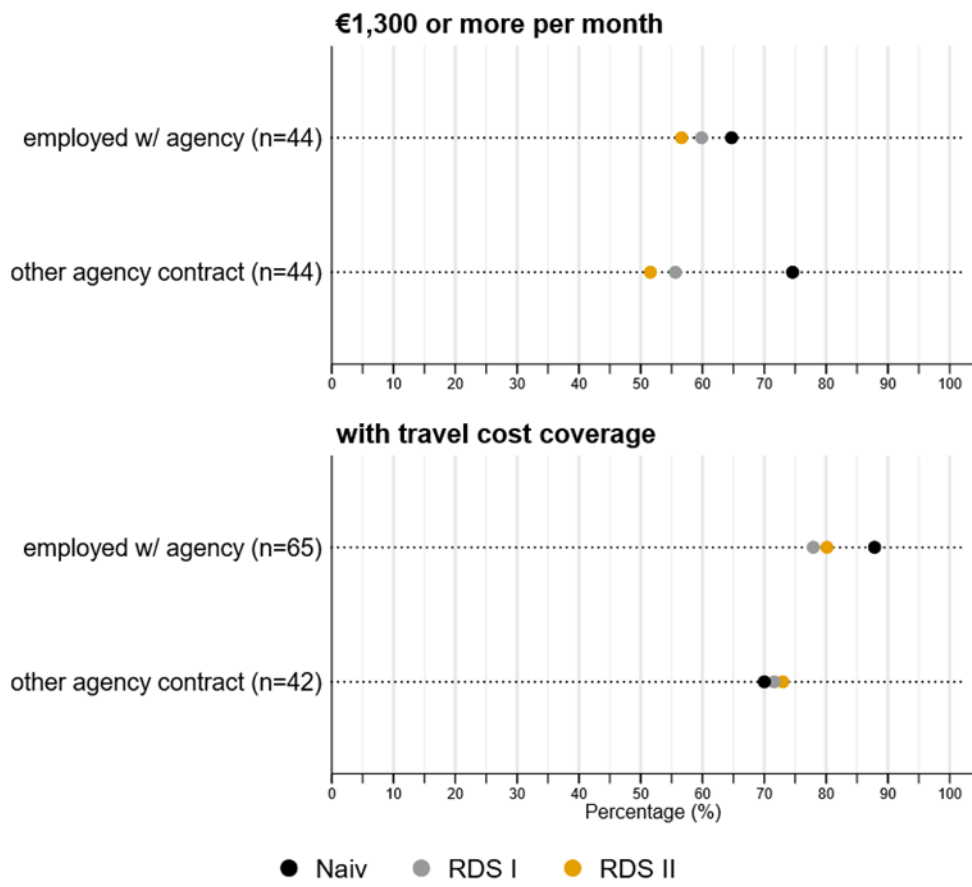
Figure A1: Proportion of live-ins who are satisfied with various life domains by agency type



Note: All observations are used to estimate proportions (including those before equilibrium was reached).



Figure A2: Proportion of live-ins who earn monthly wages above €1,300 and whose travel-costs are covered by agency type



Note: All observations are used to estimate proportions (including those before equilibrium was reached).

Figure A3: Proportion of live-ins with only short daily breaks, care duties at night, and less than one day off per week by agency type



Note: All observations are used to estimate proportions (including those before equilibrium was reached).