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# The Process of Homelessness : An Event History Analysis of Lengths of Stay in Groningen Shelter Accommodation

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› **Abstract\_** *This study explores the process of shelter exits for homeless individuals and for different shelter types in the public shelter system in the city of Groningen in the Netherlands. Individualised administrative data from the Groningen Homelessness Monitor (2003–2006) are used for estimating a Weibull hazard rate regression model. Results show that the different shelter types fit adequately with their policy purposes: lengths of stay in emergency shelter accommodation appear to be shorter than in supportive housing accommodation and clients tend to remain longest in guest houses. The results also indicate that the use of day shelters, as well as demographic variables such as age, gender and nationality, are associated with a differentiated likelihood of continuing homelessness. The results of this study in the Dutch context are compared with research on the process of homelessness in the United States, and finally the implications of these findings and future directions for research on the process of homelessness are discussed.*

› **Keywords\_** *Process of homelessness; shelter accommodation; the Netherlands*

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<sup>1</sup> This paper is derived from a master thesis submitted at the University of Groningen.

## Introduction

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Dutch housing policy is based on a concept of universal access to affordable housing; in general one should be able to find and maintain one's own housing (Wolf, 2002). If needed, residents are assisted by governmental organisations, private charity programmes or family and friends, but this is not always the case and some persons must resort to living in public service shelters and on the streets. As a result, almost every major city in the Netherlands has its own homeless population and its own homeless shelters.

Research on homelessness over recent decades has focused mainly on the causes thereof; few studies have examined the conditions that affect patterns of continuation in, and exit from, homelessness. Furthermore, most research on the process of homelessness has been done in the United States (Wong, 1997). The main conclusion of these research studies is that being homeless is not a static state, but a dynamic process in which people tend to experience multiple episodes of homelessness (Culhane and Kuhn, 1998; Piliavin et al., 1996).

The Dutch welfare system differs greatly from that of the United States. For example, the US welfare system is based on liberal principles and the belief that people should take care of themselves (Esping-Andersen, 1990) and homeless people in the US tend to receive more support from private than from public organisations. The Dutch welfare system contains elements of a social democracy and a conservative society where some state support is not uncommon; homeless persons therefore receive organised help from the Dutch government and there is access to public services and health assistance regardless of social class.

Consequently, research on homelessness conducted in the US might not be completely applicable to the Dutch situation; the differences in social and economic conditions between the two countries mean that US research can give us only minimal understanding of the dynamics of homelessness in the Netherlands. However, relatively little research has been conducted on the dynamic aspects of homelessness in the Netherlands (Greshof, 1997). It is therefore interesting to examine the process of homelessness in the Dutch context.

The single-way survey is a commonly used method in homelessness research. Such surveys generally collect quantitative data on the numbers of homeless people and their characteristics at one moment in time (Culhane et al., 1994), but they do not provide insights into the mechanisms that affect the duration of homelessness.

Longitudinal research can overcome this difficulty and its use is preferable for obtaining a better understanding of the dynamics of homelessness. For instance, several cross-sectional studies have been conducted that rely on retrospective self-reports to measure the duration of a person's period of homelessness

(Piliavin et al., 1993). The disadvantage of these studies is that people tend to overstate the length and continuity of the time they are homeless. Furthermore, the length of a current period of homelessness cannot be determined if persons are still homeless at the end of the observed period (Culhane and Kuhn, 1998). An appropriate way to overcome these shortcomings is by using administrative data on public shelter utilisation.

Such data are available from all public shelter accommodation in the province of Groningen in the Netherlands. The province has 580,000 inhabitants, approximately 185,000 of whom live in the capital city, Groningen. Most homeless accommodation is located in the city of Groningen. The state administration aims to locate and register all homeless persons in this particular city. A database tracks the individual use of Groningen's twelve shelters on a daily basis, providing a direct measure of shelter utilisation. Data provided by the shelter registry system are integrated with data from the local government administration of the city of Groningen to obtain more information on shelter users. Using this data it is possible to give a description of the patterns of shelter utilisation in Groningen and to identify the implications of exit patterns, as well as the factors that influence the continuation of homelessness in the Netherlands.

## Background

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Although there is little theoretically guided research on homelessness, some ideas on the factors influencing the duration of homelessness have been put forward (Fitzpatrick and Christian, 2006). One such factor is institutional disaffection, 'which refers to the weakening of an individual's bonds to conventional society' (Piliavin et al., 1996). Another emphasises the role of a person's capacity to control their own situation (Hoogenboezem, 2003). A third regards the length of time that someone has been homeless; after a long period of homelessness the situation can become a structural one in which a person loses the ambition to modify it. People assimilate to street culture and adopt the information values, associations and lifestyle preferences that support and give meaning to life on the streets (Snow and Anderson, 1987).

Various US studies show that the age, gender and nationality of homeless persons are relevant predictors of the duration of homelessness (Allgood et al., 1997; Allgood and Warren, 2003; Caton et al., 2005; Culhane and Kuhn, 1998; Piliavin et al., 1996; Wong et al., 1997; for a review, see Wong, 1997). The following conclusions can be drawn from this research: men tend to have longer episodes of homelessness than women; older age is related to longer episodes of homelessness; and Black and Hispanic persons tend to experience longer durations of

homelessness than White persons. As these findings refer to the North American situation, the current study explores whether comparable findings can be demonstrated in the Netherlands.

### *Groningen shelter system*

The Groningen Homelessness Monitor is implemented by the Department of Research and Statistics of the municipality of Groningen. Information is gathered from all shelter facilities in the province of Groningen for its use. The Groningen shelter system for the homeless consists of three types of shelter, each with its own target group and policies for shelter use (Beukeveld et al., 2004):

- Three emergency shelters. These are intended to provide for short periods of accommodation and people must re-register every day. Polstra (1998) argues that emergency shelters represent the start of a person's homeless career.
- Four supportive housing units. Some of these are aimed particularly at younger residents. To enter this type of shelter people undergo a mandatory admittance interview. The duration of stay depends on the length of time people need in order to find their own house or to move to other accommodation.
- Five guest houses for long-term purposes. People can stay there for an indefinite period of time and are given minimal support by social workers. To enter this type of shelter people also do a mandatory admittance interview.

The distinctions between these three types of shelter accommodation can indicate which stage of their homeless careers people are at. Theoretically, clients progress from emergency shelters to supportive housing and, ultimately, to their own accommodation (Bassuk and Geller, 2006). Therefore every type of shelter has its own policies for helping the homeless. Emergency shelters are for people who need direct help and who would otherwise have to sleep on the streets. Homeless persons in supportive housing are expected to find their own home, whereas guest houses are a more permanent solution for those that have been homeless for a longer time. Besides these night shelters, there are other shelters to which persons can go for daytime activities; their purpose is to give people a place to stay during the day and they are open to everybody.

## Hypotheses

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This study will explore whether the policies of the shelter system in the city of Groningen are reflected in the episode lengths at each type of shelter. Such a correlation would mean that persons in emergency shelters will experience the shortest episodes of homelessness, followed by the users of supportive housing accommodation. The longest episodes would be observed for persons in guest houses. This is the first hypothesis.

Based on the results of prior research from the US, the study will test the following hypotheses:

- Men have longer episodes of homelessness than women.
- Older persons have longer episodes of homelessness than persons of a younger age because younger people are still motivated to find their own accommodation (van Doorn, 2002).
- Non-Dutch users have longer episodes of homelessness than native Dutch users.
- Besides the use of night shelters, persons who also go to a day shelter are likely to have longer episodes of homelessness than persons not using this accommodation for daily activities.

The use of the day shelter is the only variable that provides more information about the behaviour of persons staying at night shelters as it indicates that persons have no place to go during the day. Furthermore, persons using the day shelter may be more familiar with the Groningen shelter system and as a result may be better assimilated to the street culture (Snow and Anderson, 1987).

Finally, it will be examined whether these four factors influencing the duration of homelessness differ according to the kind of shelter at which a person resides.

## Methods

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### *Data*

Administrative data from the Groningen Homelessness Monitor were used to examine the process of homelessness in the Dutch context. On 1 January 2004 the Department for Research and Statistics of the municipality of Groningen started a computerised registry system for the users of all twelve shelters in Groningen (Beukeveld et al., 2004). The data include each person's registration number with the administration of the local government of the city of Groningen and through this information about the shelter user's nationality is available. Nationality is unknown for persons not registered as an inhabitant in the city of Groningen.

This study covers the period from 1 January 2003 to 31 December 2006. The records of 2,063 people are used. During this time 2,939 shelter stays were recorded. The data include basic demographic characteristics, including gender, age and nationality. The database also tracked entries into and exits from the shelter system by recording dates of admission, discharge and subsequent re-admission, as well as the shelter type used by clients and whether people also applied to a day shelter.

### *Analysis*

Descriptive statistics are used to characterise the study sample. Survival analyses give the distribution of lengths of shelter stay. The hazard functions for all exits are presented, as well as for the three specific forms of shelter accommodation. A hazard function determines any change in the likelihood of a person experiencing an exit during an interval of time, given the fact that a person was at risk of an exit at the beginning of the interval.

Entry to a shelter is defined as the first time a person is observed in the registry system. An exit is defined as leaving the shelter for a continuous period of thirty days or longer. This definition avoids counting those who exited the shelter for a few days and then returned. The shelter stays that occurred within thirty days of one another are therefore collapsed into one episode of homelessness. The thirty-day exit criterion has been commonly employed by other researchers on homelessness (Culhane and Kuhn, 1998; Metraux and Culhane, 1999; Piliavin et al., 1996; Wong et al., 1997).

A Weibull hazard with gamma frailty model is employed for all shelter users to estimate the effects as well to test the first hypothesis. Also, models for the three different types of shelter are engaged to test differences in effects on the duration of shelter stays. The hazard rate for the Weibull distribution (Box-Steffensmeier and Jones, 2004) is given by the following:

$$h(t) = \lambda p (\lambda t)^{p-1} [S(t)]^\theta \quad t > 0, \lambda > 0, p > 0,$$

In this equation  $\lambda$  is a positive scale parameter,  $p$  is known as the shape parameter,  $t$  is for time spent in the shelter and  $S$  is the survival function with the variance of frailty  $\theta$ . When  $p > 1$ , the Weibull hazard rate is monotonically increasing with time; when  $p < 1$ , the hazard rate is monotonically decreasing with time; when  $p = 1$ , the hazard is flat, taking a constant value  $\lambda$ .

## Results

### *Descriptive statistics*

Table 1 presents descriptive demographic and shelter utilisation results for the overall shelter stays and the three types of shelter. The total number of all shelter stays is 2,939 for 2,063 persons. Most episodes, 2,413 (82 per cent), of homeless stays take place in emergency shelters, while for supportive housing and guest houses 219 (8 per cent) and 307 (10 per cent) shelter stays are recorded respectively. The median stay for persons in guest houses (415 days) is more than ten times as long as the median stay for persons in emergency shelters (29 days), which gives an initial indication of confirmation of the first hypothesis. This finding can be explained by the shelters' policy differences; for the emergency shelter, persons must re-register daily, while persons can stay for an indefinite period of time in guest houses.

**Table 1: Descriptive statistics by shelter type**

	All shelter users	Emergency shelters	Supportive housing accommodation	Guest houses
N <sup>a</sup>	2,939	2,413	219	307
Median length of stay	39 days	29 days	188 days	415 days
Prior shelter stay	29.8%	32.4%	11.9%	22.5%
Exit of homelessness	88.7%	92.6%	78.5%	65.5%
Using day shelter	33.2%	35.1%	21.9%	26.1%
Median age <sup>b</sup>	32 years	32 years	25 years	36 years
Gender <sup>c</sup>				
Man	75.4%	73.5%	84.5%	84.0%
Woman	23.7%	25.9%	15.5%	13.0%
Nationality				
Dutch	52.1%	50.5%	66.7%	54.1%
Non-Dutch	20.3%	19.1%	30.6%	22.8%
Unknown	27.6%	30.4%	2.7%	23.1%

<sup>a</sup> Total number of stays, the total number of persons covered in the Groningen shelter administration is 2,063.

<sup>b</sup> Age varied between 0 and 78 years and was calculated on the first day of each person's entry.

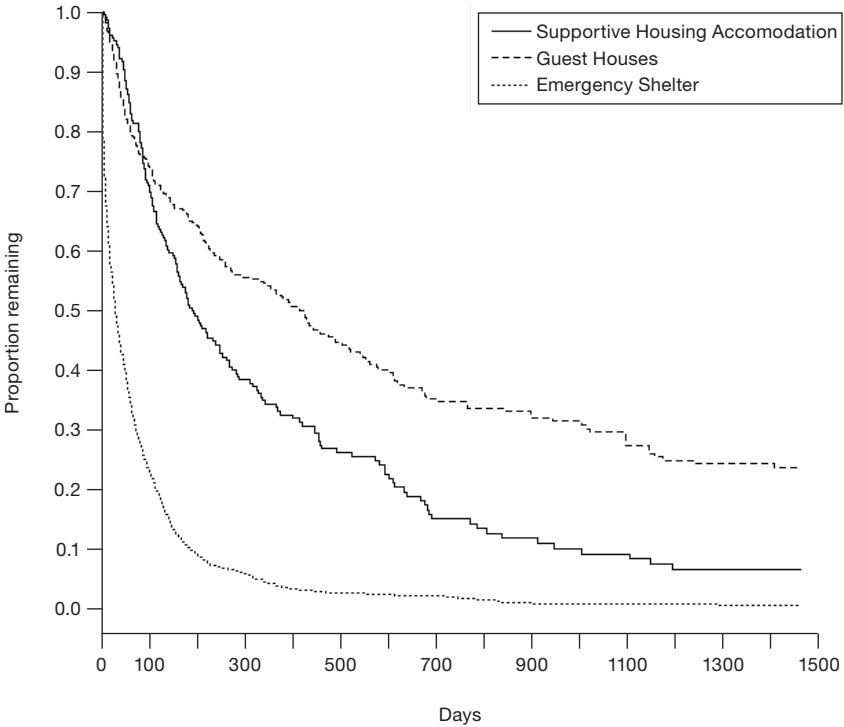
<sup>c</sup> Unknown for twenty-five stays (0.9 per cent).

These policy differences are also reflected in exit rates of homelessness; while more than 90 per cent of episodes in emergency shelters had been completed by the end of the observed period, only about 65 per cent of homeless episodes in guest houses had come to an end. Figure 1 shows the survival curves for episode lengths at each type of shelter. This figure gives a further indication of how the three types of shelter accommodation, through their policy aims, differ in the average time persons stay in a certain type of shelter. It again shows that within a month more than 50 per cent of the emergency shelter population had already left the



shelter, whereas for the other two types almost no one had left their accommodation in this first month. Overall, Figure 1 shows that each type of accommodation has its own exit pattern and must consequently be interpreted separately.

**Figure 1: Survival curves for types of shelter**



The total rate for multiple shelter episodes is about 30 per cent, as only around 10 per cent of supportive housing shelters have multiple stays. One-third of the total number of episodes are combined with the use of a day shelter; whereas for episodes in supportive housing accommodation and guest houses, one-fifth and one-quarter respectively are combined with use of a day shelter. This can be explained by the fact that those in supportive housing and guest houses have a more complete programme of social support.

Also worth noting in Table 1 are the demographic differences among users of the three shelter types. The total median age is 32 years; this was also the median age of emergency shelter users, whereas in supportive housing the median age is seven years younger and for guest house users it was four years older. This finding can also be explained by different shelter policies and other underlying characteristics of the users. Some supportive housing accommodation is only for younger people (Beukeveld and Vosselman, 2007), recognising that younger persons are still motivated to rehabilitate and find their own accommodation (van Doorn, 2002), and they therefore have a higher presence in this type of accommodation. Guest houses are the end destination in the homeless career of many people (Polstra, 1998), particularly older persons with a long history of homelessness.

The highest number of shelter stays was attributable to men, and only around one-quarter of stays related to women. A mere 13 per cent of shelter stays in guest houses involved females, which indicates significant gender differentiation in using the different types of public shelter accommodation.

Finally, looking at the nationality of shelter users it is notable that one-quarter of stays involve persons of unknown nationality. This is due to the fact that a person's nationality is only identified if he or she is registered in the local administration of the city of Groningen. For all three types of shelter accommodation the proportion of non-Dutch persons (around 20 per cent) is more or less comparable to the total number of non-Dutch persons in the city of Groningen (Bureau Statistiek en Onderzoek, 2005). However, the number of non-Dutch persons in supportive housing accommodation (around 30 per cent) suggests the total number of non-Dutch users may be somewhat higher than indicated, the real percentage being hidden by the high percentage of persons with unknown nationality in the data.

### *Frailty Weibull models*

Table 2 contains the maximum-likelihood estimates of the parameters of the survival function for the observed spells of homelessness and the absolute value of their associated asymptotic t-statistics, using the Weibull with gamma frailty specification. A positive coefficient indicates that an increase in the value of the associated variable increases the conditional mean length of a homeless spell. In the first column of Table 2 a model is shown for the entire shelter population, where type of shelter is included as a covariate to see if there are significant differences between types of shelter. In the other three columns a model is given for each type of shelter, and the models are controlled for multiple stays of homelessness.

**Table 2: Parameter estimates for Weibull model with gamma frailty of shelter spell durations for types of shelter<sup>a</sup>**

	All shelter users	Emergency shelters	Supportive housing accommodation	Guest houses
Constant	5.73 <sup>d</sup> (36.81)	3.87 <sup>d</sup> (25.50)	4.90 <sup>d</sup> (16.50)	5.04 <sup>d</sup> (9.51)
Age	0.01 <sup>d</sup> (2.90)	0.00 (0.95)	0.05 <sup>d</sup> (5.01)	0.03 <sup>d</sup> (3.27)
Gender 0 = male	-0.32 <sup>d</sup> (-3.77)	-0.35 <sup>d</sup> (-3.87)	-0.42 <sup>b</sup> (-1.80)	0.37 (1.12)
Nationality				
Dutch	-	-	-	-
Non-Dutch	-0.20 <sup>c</sup> (-2.21)	-0.10 (-0.97)	-0.23 (-1.25)	-0.74 <sup>d</sup> (-2.83)
Unknown	-0.11 (-1.19)	-0.10 (-1.03)	-1.14 <sup>d</sup> (-3.07)	0.14 (0.45)
Using day shelter 0 = not using	0.69 <sup>d</sup> (8.45)	0.74 <sup>d</sup> (8.27)	0.41 <sup>c</sup> (1.97)	0.39 (1.54)
Type of shelter				
Supportive	-	-	-	-
Emergency	-2.03 <sup>d</sup> (-17.60)	-	-	-
Guest houses	0.65 <sup>d</sup> (3.99)	-	-	-
N	2908	2393	218	297
Log-likelihood	-13812.3	-11163.1	-1152.1	-1448.3

<sup>a</sup> Absolute values of asymptotic t-statistics are in parentheses.

<sup>b</sup> p<0.1.

<sup>c</sup> =p<0.05.

<sup>d</sup> =p<0.01.

In the overall model, emergency shelter is negative and statistically significant compared with supportive housing accommodation, while the covariate guest houses is positive and statistically significant compared with supportive housing accommodation. These results confirm what was observed in Table 1 and Figure 1. The first hypothesis is confirmed: persons in emergency shelters have significantly shorter stays than persons in supportive housing accommodation and persons in guest houses have the longest stays. Because of the large differences in the policies of the three shelter types, and indications of difference in user characteristics, the overall model is separated by three models of shelter type.

Age is significant and positively related to the duration of homelessness for the overall model, meaning that the duration of sheltered homelessness increases with age. This relation is not found for the emergency shelter model, meaning that age

has no significant effect on the duration of homelessness for this type of shelter. It also indicates that the positive effect on the duration of homelessness for age in the overall model is probably the result of the users of supportive housing accommodation and guest houses, with a significant, positive relationship between age and duration. Therefore, the second hypothesis on supportive housing accommodation and guest houses can be confirmed: persons of an older age experience longer episodes of homelessness than younger persons.

The gender coefficient is negative and statistically significant for the overall model, implying that female residents stay at shelters for shorter lengths of time on average. This finding holds only for emergency shelters, but there is also an indication that the same effect holds for supportive housing accommodation although it is not strongly significant. An interesting result is the positive, but not significant, finding for females in guest houses: although not significant, it indicates that females stay longer in guest houses than males. The third hypothesis only holds for emergency shelters where men have longer episodes of homelessness than women.

The variable nationality must be interpreted with care, due to the fact that nationality is unknown for almost 30 per cent of residents. For the overall model, non-Dutch nationality is negative and statistically significant compared with homelessness episodes of native Dutch individuals, indicating that non-Dutch users stay for short lengths of time at shelters. However, these findings do not hold for emergency shelters and supportive housing accommodation, and it is thus only in guest houses that non-Dutch shelter users experience significantly shorter spells of homelessness than Dutch shelter users. Consequently, the fourth hypothesis is rejected, and in fact a contrary result is found for guest houses: non-Dutch users have shorter episodes of homelessness than Dutch users.

There is no statistically significant effect found for residents of unknown nationality in the overall model. Unknown nationality means that a person is not registered with the local administration of the city of Groningen, a requirement for entering supportive housing accommodation, and it is only for supportive housing accommodation that a negative, statistically significant relationship is found, implying shorter stays for persons with unknown nationality. However, this group only contains six stays and this finding probably means that the shorter stay is the result of persons not being able to register themselves during their short homeless episode.

The final hypothesis is tested by analysing the use of day shelters in relation to the use of night shelters. Use of a day shelter is positive and statistically significant for the overall model, which implies that persons who also apply to use a day shelter have longer stays than those who do not. The positive relationship is found for all shelter types, but while it is significant for emergency shelters and supportive housing accommodation, it is not significant in the case of guest house residents.

As emergency shelters are only for night use, their users must look after themselves during the day. This confirms the last hypothesis: persons that go to a day shelter have longer episodes of homelessness than those who do not. It is plausible that users of day shelters are more familiar with the social support system of the city of Groningen, are better assimilated to the street culture and have difficulties structuring a life of their own.

## Conclusion and Discussion

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This study explored exit patterns of individual cases of homelessness using the administrative data of the Groningen shelter system. It is the first study in the Netherlands to use this kind of data to describe the underlying patterns of shelter discharge and provides a good basis for further research on the process of homelessness.

The policy aims of each type of shelter are indeed reflected in the episode lengths for each. Thus, emergency shelters offer support for a shorter period of time than supportive housing accommodation. While this pattern results from the assignment of subgroups of the homeless population to particular shelters, episode lengths also reflect the objectives of the shelters. For instance, after a short period of staying in an emergency shelter people are referred to another service if further assistance is needed. In contrast, supportive housing accommodation offers support for a transitional period within which persons are assisted to find independent housing. Thus, a mixture of both reflection and selection results in the episode lengths that correspond to the types of shelter.

Demographic variables are important predictors of when a person will exit a shelter. As in prior research (Allgood and Warren, 2003; Christensen and Vinther, 2005; Culhane and Kuhn, 1998), periods of homelessness were found to be longer for men than for women. However, this finding is only significant for users of emergency shelters, indicating that women tend to use an emergency shelter as a more temporary solution than men do. It is interesting to consider why this might be so. Is it because the culture and/or policy of the shelter is not attractive to women or are women better able to move to other residencies? Further research is needed to explore this finding.

The finding that older homeless individuals remain homeless for longer periods is in line with prior research (Allgood and Warren, 2003; Christensen and Vinther, 2005; Culhane and Kuhn, 1998; Piliavin et al., 1993; Piliavin et al., 1996). In the current study, longer periods of shelter use by older homeless persons was found for only the supportive housing accommodation and guest houses, suggesting that younger homeless individuals are more equipped to find their own accommodation if they receive professional support. Moreover, guest houses seem to represent a

more permanent solution for older persons than for younger people, which might indicate that older persons are less motivated or are not capable of changing their situation of homelessness.

It is surprising that non-Dutch people appear to stay for a shorter time in guest houses than Dutch people. This finding contradicts the results of Culhane and Kuhn (1998), who found that non-White clients stay homeless for longer than White clients and submit that this difference may be caused by the social and economic barriers historically associated with race. In the Netherlands these barriers seem to be less problematic, as no correlation is found between nationality and lengths of stay in emergency shelters or the supportive housing accommodation. It is noteworthy, however, that non-Dutch individuals stay for shorter lengths of time in guest houses. More research is needed to further clarify this finding.

The current research also indicates that those who visit day shelters use emergency shelters and supportive housing accommodation for longer periods of time. It would appear that the use of day shelters in addition to night shelters may be an indication of familiarity with the shelter system and of assimilation to street culture.

The study used administrative data from shelters in the province of Groningen, the main purpose of which is to identify who uses the public shelter system. The type of in-depth information that may provide insight into the causes of homelessness or why any of the study's subjects became homeless is not collected. Neither was it possible to determine where people found accommodation after exiting the shelter system or between two episodes of shelter use. Furthermore, there is no available data on the physical and behavioural health of those using the system. Further research should attempt to assemble more information on the patterns of exit. This information can be integrated with other data from the local government administration.

This explorative study has found that the process of shelter exit is associated with demographic variables and with the use of day shelters for different shelter types in the Groningen system. It is difficult to say whether these patterns also apply to other Dutch cities, as each municipality organises its own system of shelters with different policies for entering and staying at the shelter accommodation. Nevertheless, it gives an idea of patterns of homelessness in the Dutch context and may be useful from a policy perspective in helping the homeless to find stable accommodation.

The influence of certain demographic characteristics on shelter use is interesting and several questions remain concerning, for example, whether women or non-Dutch nationals do not fit within the organisation, whether they have a different experience of homelessness or whether they have perhaps suffered discrimination. These issues should be examined further and may assist the authorities to organise the shelters in such a way that these groups can be supported adequately.

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