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Social Assistance Dynamics among Young Adults in Finland: Duration Dependence and the Role of Parental Recipiency

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Social Assistance Dynamics among Young Adults in Finland: Duration Dependence and the Role of Parental Recipiency

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Abstract

The probability of social assistance exit decreasing over time is called negative duration dependence. This is one of the most debated aspects of social assistance receipt. This study analyses duration dependence among young adults in Finland and aims to show how social assistance receipt *per se* affects the likelihood of exiting social assistance. It also examines whether parental recipiency is associated with duration dependence. While the intergenerational transmission of social assistance has received extensive research attention, there is a scarcity of evidence on whether parental recipiency is associated with social assistance exits and duration effects. This study uses full monthly history of social assistance receipt between ages 19 and 29. The analyses are based on Finnish register data and conducted using discrete-time event-history models (pooled logistic, random-effect logistic and fixed-effect logistic). The findings indicate that controlling for all time-invariant characteristics reduces but does not completely remove duration dependence among young adults. They also show that those whose parents received social assistance are less likely to exit social assistance. In models controlling for all time-invariant characteristics, parental social assistance receipt is also linked with stronger duration dependence. The implications of these findings are discussed.

Keywords: social assistance, duration dependence, intergenerational transmission, young adults, Finland

Introduction

Social assistance, a last-resort means-tested benefit, is used to provide an acceptable standard of living for households and families whose income would otherwise be insufficient (Immervoll, 2009). Although it is typically intended as a short-term relief, many studies have revealed patterns of long-term reliance on social assistance. Furthermore, there are indications that the probability of social assistance exit decreases over time, a pattern that can be called negative duration dependence (Contini and Negri, 2007). One issue that has attracted particular debate is the question of whether recipiency is associated with benefit dependence, in other words whether it creates what is known as a 'welfare trap' (Contini and Negri, 2007). However, long-term recipiency or negative duration dependence do not in themselves provide sufficient grounds for the conclusion that the benefit itself can cause such a trap effect. This study contributes to the literature by analysing the relative roles of individual characteristics and social assistance receipt *per se* in explaining negative duration dependence among young adults in Finland.

Earlier studies on duration dependence in social assistance receipt have not specifically addressed the situation of young adults, yet it is precisely this age group that has the highest rates of social assistance receipt in the Nordic countries (Lorentzen *et al.*, 2014). This study also examines whether parental recipiency is associated with social assistance exits and duration dependence. While the intergenerational transmission of social assistance has received much focus, there is a scarcity of research into these questions.

The analyses of this study are based on Finnish register data. They use full monthly history of social assistance receipt among young adults aged 19–29. Typically, studies of social assistance dynamics use a variable measuring whether or not an individual has received social assistance during a given year (Cappellari and Jenkins, 2008; Immervoll, Jenkins and Königs, 2015). However, annual information can paint too crude a picture. The analyses in this study are conducted using discrete-time event-history analysis, taking account of repeated spells and unobserved heterogeneity.

Background

Duration dependence in social assistance receipt

Previous research on social assistance dynamics has used different kinds of approaches: summary statistics about the length of assistance receipt, time-to-event analyses of social assistance receipt, analyses of state dependence, *a priori* categorizations of social assistance dynamics, and various person-oriented approaches to describe and group the development of recipiency. This study belongs to the category of time-to-event studies. Here, the focus has been on factors and events associated with social assistance entries and exits (e.g. Sandefur and Cook, 1998; Lorentzen, Dahl and Harsløf, 2012; Carpentier, Neels and Van den Bosch, 2017a), destinations after an exit from social assistance (e.g. Dahl and Lorentzen, 2003; Bäckman and Bergmark, 2011), and the association between the duration of social assistance receipt and the probability of exit from social

assistance (e.g. Blank, 1989; Mood, 2013; Hohmeyer and Lietzmann, 2020).[1] This study focuses on the latter by analysing duration dependence.[2]

The literature on social assistance receipt often emphasizes two dynamic patterns: while most recipients only receive social assistance for a short period of time, there is a group of individuals who can be described as long-term recipients. In the Nordic countries social assistance spells tend to be rather short (Gustafsson *et al.*, 2002; Immervoll, Jenkins and Königs, 2015), particularly among young adults (Mood, 2013). However, individuals typically re-enter social assistance at shorter notice in the Nordic countries (Immervoll, Jenkins and Königs, 2015). Additionally, young adults are more likely than older adults to re-enter (Gustafsson *et al.*, 2002). Young adulthood is characterised by important life course events such as school-to-work transition, transition to independent living, partnership formation and entering parenthood (Settersten, 2007). These events, and the economic vulnerability associated with many of them, increase the risk of social assistance receipt (e.g. Kauppinen et al., 2014; Lorentzen, Dahl, & Harsløf, 2012).

Different explanations have been suggested for negative duration dependence. There are possible mechanisms to explain why decreasing exit rates could be caused by recipiency itself (*'genuine'* duration dependence). The general idea behind these explanations is that the benefit could have effects on individuals' choices or their preferences and behaviour. Bane and Ellwood (1994) suggested three models. According to the rational choice model, recipients constantly evaluate their situation and, consequently, act based on their preferences. This model emphasises the role of economic incentives, other possible income sources and other possibilities. The second, expectancy model states that prolonged recipiency (and failures to exit) decrease the individual's motivation (e.g. to search for a job) and sense of control. The third model is called the cultural model. This model has it that long-term recipiency results in anti-social behaviour and lack of interest or even reluctance to integrate into mainstream society. These models, however, are focused on the individual recipient's behaviour and therefore will likely be limited. Other possible explanations may be related to the association of duration dependence in social assistance receipt with difficulties in escaping unemployment or poverty (Contini and Negri, 2007). For instance, long-term receipt of social assistance and other benefits can send adverse signals to employers (Scarpetta, Sonnet and Manfredi, 2010). Furthermore, unemployment can have the effect of eroding jobseekers' skills (Scarpetta, Sonnet and Manfredi, 2010).

The association between spell duration and the likelihood of exiting social assistance may, however, also be related to recipients' characteristics. If these characteristics explain the association, duration dependence can be described as '*spurious*' since it means that the observed pattern would be due to selection bias. If individuals have a different risk of exiting social assistance and this risk is constant across all spells, the likelihood of exit will appear to decline over time since individuals with a high propensity to exit will leave social assistance first, while individuals with a lower propensity will

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[1] This grouping is not mutually exclusive. Studies have typically addressed multiple different questions and given them different relative importance.

[2] State dependence refers to the effect of past benefit receipt on present benefit receipt. There are more studies on state dependence than on duration dependence (Cappellari and Jenkins, 2008). One important reason for this is the lack of data on continuous benefit histories, which effectively precludes the use of time-to-event approaches (Cappellari and Jenkins, 2008).

have longer spells. However, it is likely that this kind of individual specific risk cannot be fully measured using observed variables.

The question of whether negative duration dependence is '*spurious*' or '*genuine*' has attracted some research. Studies conducted in different countries have found that even when both observed and unobserved characteristics are taken into account, a longer duration of social assistance receipt reduces the likelihood of exiting social assistance (e.g. Sandefur and Cook, 1998; Bäckman and Bergmark, 2011; Mood, 2013; Hohmeyer and Lietzmann, 2020).[3] However, it is rarely that these studies have controlled for all time-invariant characteristics. Although duration dependence seems to have an independent effect on the likelihood of exiting, individual characteristics nevertheless play an important role. For instance, based on annual information on social assistance receipt in Sweden and a unique research design, Mood (2013) found that around half of duration dependence is due to selection.

Social assistance receipt across generations

Earlier research has also addressed the association between parental and offspring social assistance receipt. Findings show that parental social assistance receipt is strongly related to disadvantages among young adults (e.g. Ringbäck Weitoft *et al.*, 2008; Vauhkonen *et al.*, 2017), and the evidence from the Nordic countries indicates intergenerational transmission of social assistance (e.g. Stenberg, 2000; Moisio *et al.*, 2015). Among young adults, parental social assistance receipt is especially associated with long-term take-up of social assistance (Ilmakunnas and Moisio, 2019). Additionally, parental social assistance receipt has a stronger association with offspring recipiency than with other frequently studied dimensions of parental disadvantage (Ringbäck Weitoft *et al.*, 2008; Kauppinen *et al.*, 2014; Ilmakunnas and Moisio, 2019). Earlier research has pointed out that state dependence in social assistance receipt seems to be stronger among disadvantaged groups (Immervoll, Jenkins and Königs, 2015). Despite these findings, there are no earlier investigations into whether parental social assistance receipt is associated with duration dependence. Understanding how parental social assistance receipt is associated with social assistance dynamics could help to shed light on why there is such a high intergenerational correlation in recipiency. Previous studies into this association have been limited since they have not analysed continuous social assistance histories (see e.g. Kauppinen et al., 2014; Ilmakunnas and Moisio, 2019).

There are numerous mechanisms of parental influence on their children and the transmission of (dis)advantage across generations. The most notable include monetary and non-monetary investments; information on jobs and educational institutions, contacts and networks; the genetic transmission of characteristics valued in the labour market; and parental shaping of children's skills, attitudes, beliefs and behaviour (e.g. Ermisch, Jäntti and Smeeding, 2012). The extant literature suggests specific mechanisms through which parental poverty could affect children and through which social assistance receipt could be inherited (e.g. Jenkins and Siedler, 2007). Yet, studies using sibling fixed-effect approaches in the Nordic countries have not found any evidence that parental social assistance receipt has a causal effect on offspring recipiency (Lorentzen, 2010; Edmark and Hanspers, 2015). This implies that the specific mechanisms involved in the inheritance

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[3] There are, however, a few studies that have not found this pattern of negative duration dependence (Blank, 1989; Gustafsson *et al.*, 2002; Dahl and Lorentzen, 2003).

of social assistance may not be that important, at least in the Nordic welfare state context. In fact, it seems that intergenerational transmission is mostly explained by low parental income and other associated disadvantages (Stenberg, 2000; Ringbäck Weitoft *et al.*, 2008; Edmark and Hanspers, 2015).

There are different reasons why the effect of parental social assistance receipt is not necessarily constant over time. As implied by the life course perspective, it is possible that early experiences can be important with regard to both the incidence and the effects of various critical life events (Elder, Johnson and Crosnoe, 2003). In other words, it is possible that, on the one hand, a disadvantaged social background makes it harder for the individual to cope with the issues and events that have led to social assistance receipt and, on the other hand, makes individuals more vulnerable to additional critical life events. There is also a possible direct relationship between parents' financial resources and their adult children's financial difficulties. It is unlikely that low-income parents are in the position to support their adult children financially – at least for as long a period of time or with as large amounts of money. Parents support their adult children especially when they face temporary difficulties (Swartz *et al.*, 2011), and Finnish research has shown that parents of higher status or income are more likely to give financial support to their children (Majamaa, 2013). Financial help from parents can help to prevent the prolongation of social assistance receipt and any additional problematic or unexpected life situations.

Finnish social assistance system

In Finland, social assistance is a last-resort means-tested benefit that is granted only if the applicant has no other source of income, or their current income is inadequate, or they have not yet received income they are due. The benefit unit is the household. Until the beginning of 2017, social assistance was administered by municipalities. The Finnish social assistance system has three parts: basic, supplementary and preventive social assistance. Basic social assistance accounts for over 90% of total social assistance expenditure. It is a monthly benefit intended to cover the essential costs of daily living. The amount of basic social assistance is adjusted based on household type and number of children.

The share of social assistance recipients among young adults is higher in Finland than in Norway and Sweden (Lorentzen *et al.*, 2014). Possible explanations include the fact that social assistance in Finland often serves as a top-up benefit (Kuivalainen and Nelson, 2012); that unemployment has been at a higher level in Finland in recent decades (OECD, 2019); and that there are hardly any restrictions regarding specific population subgroups in Finland. For instance, there are no age-based restrictions for young adults. In fact, unlike in Norway and Sweden, young adults living in the parental home in Finland are eligible to receive social assistance since adult children are here considered to form their own family (Lorentzen *et al.*, 2014). Additionally, there is no maximum limit for the length of period that a household can receive social assistance. Having said that, the Finnish social assistance system has in the past two decades undergone reforms that have brought an increase in activation measures and sanctions (Kananen, 2012).

There are, however, some specific policy elements that are particularly related to young benefit recipients. These relate to a wider discussion on additional conditions for benefit receipt, such as participation in training or activation measures. One of the employment benefits available in

Finland is the labour market subsidy, which is available for persons with no work history and those who have exceeded the maximum period for other unemployment benefits. Individuals under 25 years of age with no vocational training are required to apply to vocational training in order to be eligible. This means that for those who fail to meet these conditions, there are no other options than social assistance. Furthermore, since 2011 the authorities have been able to reduce the amount of social assistance paid to people aged under 25 who have dropped out of education or have not accepted a study place (Kananen, 2012).

Research questions and expectations

The first research question of this study is*: What are the relative roles of individual characteristics and social assistance receipt per se in explaining long spells of social assistance among young adults*?

It is expected that among Finnish young adults, the longer the social assistance spell, the less likely it is for individuals to exit social assistance. It is also expected that duration dependence decreases when observed individual characteristics (various socio-demographic factors and parental background) are taken into account, and, on top of that, when unobserved characteristics are taken into account.

The second research question is: *Do young adults whose parents received social assistance have longer social spells and do they exhibit stronger duration dependence*?

It is expected that young adults whose parents received social assistance are less likely to exit from social assistance than those whose parents were not recipients even when spells of similar length are considered. It is expected that the association will also be found when observed and unobserved individual characteristics are taken into account. Additionally, it is expected that parental social assistance receipt is associated with stronger duration dependence.

Data and methods

Data and variables

The analyses are based on Finnish register data (Statistics Finland contract number TK-52-598-10). The dataset comprises a 25% random sample of individuals born between 1982 and 1987, which allows individuals to be followed until 2016. The sample includes individuals who lived in Finland at least during one year during the period 1991–2012. In addition to basic demographic information, the data include variables measuring employment, main activity status, education, social assistance and income. The register information was combined by Statistics Finland.

In the analyses, individuals are followed from the year they turned 19 to the year when they turned 29. Although individuals become eligible for social assistance when they turn 18, means-testing means that some individuals living independently can receive social assistance even before age 18. Thus, it is difficult to precisely specify an age when individuals enter the risk set. Starting the follow-up from the beginning of the year when individuals turn 19 ensured that everyone from a birth cohort had been eligible for at least a month.

The dataset used includes information for each calendar month on whether a sample person had received social assistance. This is a major advantage of this study. Many previous studies have used survey information, which can have problems related to attrition (Cappellari and Jenkins, 2008) or misreporting of recipiency (Bruckmeier, Hohmeyer and Schwarz, 2018). Most previous studies have not had access to full monthly social assistance history. The use of a year as a period of analysis does not allow considering transitions within a year or spells that continue through the turn of the calendar year. In line with many previous studies, this study does not consider gaps of one month in social assistance receipt as exits (e.g. Bäckman and Bergmark, 2011; Schels, 2018). These short gaps are likely explained, at least in part, by administrative errors and other problems in payments, and their inclusion could result in overestimations of the likelihood of exit.

One weakness of this study is that all other information except social assistance receipt is measured at an annual level. For this reason, independent variables were assigned the values they had in the first month of the social assistance spell. Sensitivity analyses were conducted in which the value of independent variables was based on the closest annual data point. Another related issue is that right-censoring, with the exception of recipiency at the end of the follow-up, could not be taken into account as precisely as social assistance receipt. It is important to keep in mind that the typical approach – measuring recipiency annually – has a similar, albeit opposite problem in that the information on social assistance receipt is inaccurate.

The main variable of interest was the length of social assistance spell. Another important variable was a dummy for parental social assistance receipt (value 1 if parents received social assistance, otherwise 0). Parental social assistance receipt – and confounders for parental social assistance receipt: family type of the parental home, parental unemployment and highest parental educational attainment – was measured for the year when the sample persons were 15 years of age. Parental information refers to parents living in the same household as the sample person.

The following variables were used as covariates referring to the sample persons: sex, age at the start of the spell, country of birth, household type, whether the sample person was living in the parental home, degree of urbanisation of municipality of residence, and highest educational attainment. Seasonal variation was considered by including a dummy variable for each calendar month. Age was measured at the level of month. The variable for country of birth received value 1 if the sample person was born outside Finland and value 0 if the person was born in Finland. The variable for household type had four groups: 1) single household, 2) two adults, no children, 3) single-parent family and 4) two adults and children. Living in the parental home was measured using a dummy variable (value 1 for those living in the parental home, otherwise 0). The variable for highest educational attainment had three groups: 1) compulsory education, 2) secondary education and 3) tertiary education. The variable for parental family type was a dummy variable (1 for single parents, otherwise 0). The variable for highest educational attainment among parents had four groups: 1) compulsory education, 2) secondary education, 3) lowest level of tertiary education[4] and 4) tertiary education. Parental unemployment was measured using a dummy variable (value 1 if at least one of

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[4] 'Lowest level of tertiary education' was discontinued and removed from the Finnish education system in 1996 when universities of applied sciences were founded. The category principally referred to vocational college. Among the younger generations there are hardly any people with this educational level, but it is quite common among older generations.

the parents had experienced unemployment, otherwise 0). The dummy variable indicating whether the sample person lived in a rural municipality was measured using information on the degree of urbanisation of the municipality of residence (classification by Statistics Finland). Information on the variables used in the study is shown in Table 1.

Statistical methods

The main statistical method used in this study was discrete-time event-history analysis. The discrete-time approach was used since it is possible to exit social assistance only at the end of the month. The dataset used for event-history analysis included only those months in which a sample person had received social assistance. A new spell was indicated when a sample person began to receive social assistance again after exiting social assistance. In event-history analyses, left-censored spells, i.e. spells starting before the follow-up, were disregarded. Furthermore, analyses were conducted using only spells with no missing values in independent variables. For this reason, 2,996 individuals and 9,739 spells were not included in the analyses. The main reason was the lack of information on parental background (typically immigrants). 5,218 spells were ongoing when the follow-up of individuals ended. These right-censored spells were included in the analyses. The total number of spells used in the analyses was 111,321 and the total number of individuals was 35,580.

Independent variables and the distribution of social assistance months and spells were examined by means of cross-tabulation and summary statistics. The length of social assistance spells was descriptively illustrated using Kaplan-Meier survival curves (Andreß, Golsch and Schmidt, 2013). The Kaplan-Meier curves shown were conducted using pooled data with all social assistance spells.

In discrete-time event-history logistic regression models, the dependent variable was exit from social assistance. Independent variables can also be included in these models. In this study, based on an inspection of the hazard function, the length of social assistance spell was included as a logarithmic transformation in the regression models. The variable was included in binary logarithm form, which made it possible to interpret the estimates as the effects when the length of social assistance spell doubles. A graph comparing observed hazard rates and the modelled function is provided in the Appendix. Adding an interaction term between parental social assistance receipt and the duration variable allowed the effects of parental receipt to vary across the values of the duration variable.

This study followed an approach reviewed by Teachman (2011) that allows for the analysis of repeatable events and that takes into account unobserved heterogeneity in a discrete-time context. The regression analyses were started by estimating logistic event-history models using pooled data. However, these models do not allow taking account for dependence between spells of the same individual (Teachman, 2011).[5] These models were followed by random-effect (RE) logistic event-history models. The idea of these models is that RE describes individual specific unobserved risk factors that are fixed over time. RE is common to all of the same person's spells and it is not explained by observed characteristics alone. For example, it can be expected that some individuals are more prone to having long spells in a way that cannot be captured using the observed variables.

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[5] The number of social assistance spells can, of course, be controlled, but in that case it is assumed that all within-person variation is explained by the number of spells (cf. Teachman, 2011).

In the RE model, it is assumed that all time-invariant confounders are included (Allison, 2009; Andreß, Golsch and Schmidt, 2013). This assumption is strong, and it is likely that there are unobserved characteristics that are correlated with RE. For this reason, fixed-effect (FE) logistic event-history models were also estimated (see Teachman, 2011). FE logistic models control for all time-invariant unobserved characteristics (Allison, 2009; Andreß, Golsch and Schmidt, 2013). This is a major advantage compared to other models estimated in this study and many previous studies as well. The FE approach uses only variation within individuals (Allison, 2009). For this reason, individuals showing no variation (only spells of one month of social assistance or only a right-censored spell) are not included in the FE models. Research focusing on duration dependence has typically used RE models. In young adults' monthly social assistance histories, there is a lot of variation within individuals since the prevalence of social assistance receipt is high during young adulthood and young adults often have multiple spells. Thus, it can be argued that the use of FE models was an appropriate choice in this study. The FE models covered 79% of the individuals (27,941) and 91% of all spells (101,071) used in the pooled logistic and RE models. Time-invariant variables – such as parental recipiency – cannot be estimated in FE regression. However, it was possible to analyse the effect of parental social assistance receipt on duration dependence using an interaction term (see Teachman, 2011).

Results

Descriptive statistics

Descriptive information on the variables used in this study is presented in Table 1. The information refers to the situation at the start of a social assistance spell. Individuals whose parents had received social assistance accounted for 24% of all spells. Men accounted for 51.3%. The most common household type was a single adult household. 12.1% of the spells were among individuals who lived in the parental home.

Table 1. Descriptive statistics for the data used in the analyses of social assistance exits.

Variable	% or mean (sd)
Calendar month	6.0 (3.3)
Parental SA receipt	24.3%
Parental single-parent household	32.7%
Parental unemployment	40.2%
Parental compulsory education	19.7%
Parental secondary education	50.6%
Parental lowest tertiary education	18.2%
Parental tertiary education	11.5%
Age	24.3 (3.1)
Female	48.7%
Born outside Finland	5.9%
Compulsory education	39.4%
Secondary education	56.9%
Tertiary education	3.8%
Lives in the parental home	12.1%
Single	45.1%
Single-parent	13.0%
Couple, no children	21.7%
Couple, children	20.1%
Lives in a rural municipality	11.5%
Number of months of social assistance	636 937
Number of spells	111 231
Number of individuals	35 580

Note: Variables refer to situation at the start of a social assistance spell. Pooled data including all spells.

Table 2 provides descriptive statistics on social assistance dynamics. Receiving social assistance at some point during young adulthood is highly common in Finland: almost 35% received social assistance at least once between ages 19 and 29. The share was approximately 38% if left-censored spells were also considered. The mean length of a social assistance spell was 5.4 months and the mean number of spells during the follow-up 3.1. However, the most common length of a spell was just one month, and the most typical case was an individual with only one spell. One-third of young adults had only one spell and just under 35% of all spells were one month long. These descriptives indicate that both short-term and long-term receipt of social assistance can be found among Finnish young adults.

Table 2. Descriptive statistics on social assistance dynamics among young adults aged 19–29.

Descriptive information	Summary statistics
Share of young adults receiving social assistance at some point during ages 19-29	34.9 %
Share of individuals receiving social assistance at some point during ages 19-29, left-censored spells considered	38.3 %
Mean number of spells of social assistance per individual among recipients (standard deviation)	3.1 (sd 2.4)
Mean length of spells of social assistance among all spells (standard deviation)	5.7 (sd 9.9)
Share of individuals with only one spell of social assistance among recipients	33.6 %
Share of spells one month in length	34.7 %

Note: Gaps of one month were not considered as an exit from social assistance. Descriptive statistics were calculated using individuals with no missing information on independent variables used in the regression analyses.

Descriptive analyses of duration dependence

Next, duration dependence in social assistance is illustrated descriptively using Kaplan-Meier survival curves. These curves illustrate the fraction of sample persons staying in social assistance for a given period of time from the start of a social assistance spell. Figure 1 illustrates a survival curve using information on all spells. The figure shows that the longer the social assistance spell, the lower the likelihood of a young adult exiting social assistance. A large share of individuals exit social assistance during the very first months of the spell. One-third exited after the first month and almost half had left social assistance after two months. However, the share of individuals leaving social assistance decreases rapidly especially during the first months. The decrease slows down particularly after social assistance receipt has continued for slightly over a year.
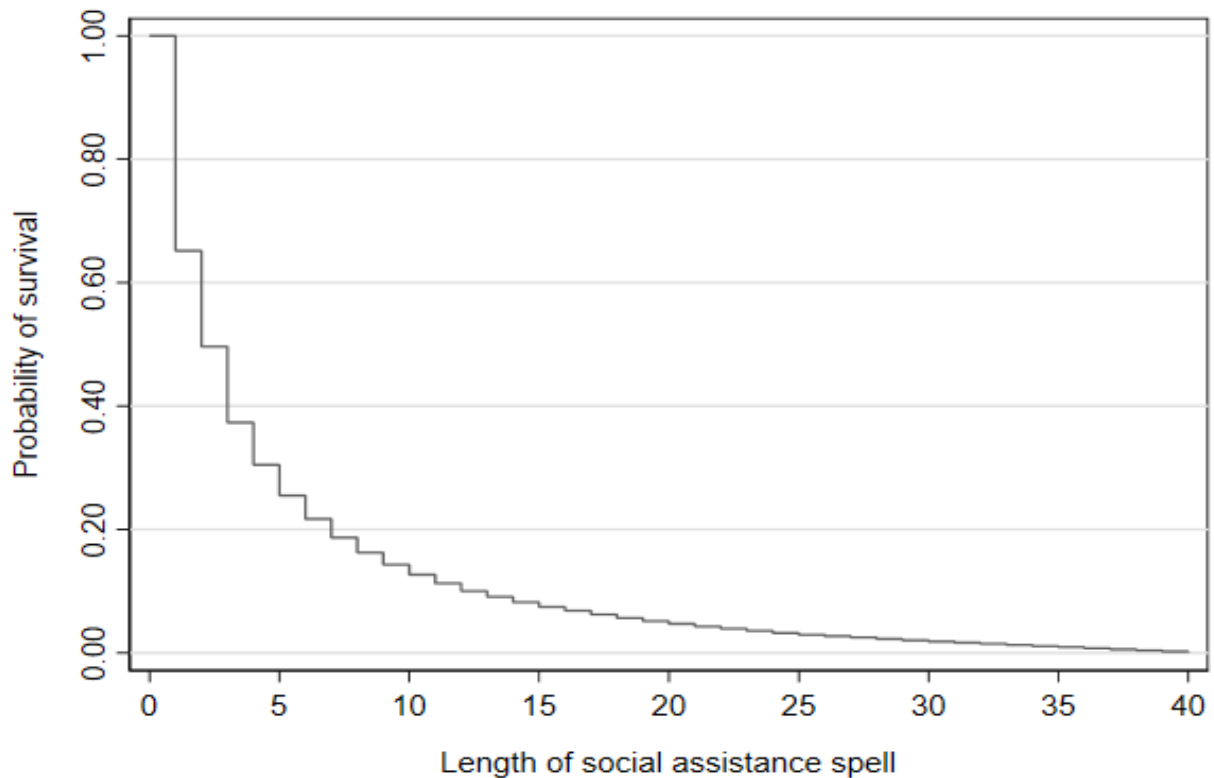
Figure 1. Kaplan-Meier survival curve: the probability of exiting social assistance among young adults aged 19–29, pooled data including all spells. Note: the follow-up is restricted to 40 months.

Figure 2 illustrates the likelihood of exiting social assistance separately for parental social assistance receipt and non-receipt. It shows that there is a difference between the two groups. Additionally, the log-rank (and Wilcoxon) test for equality of survival functions showed that the difference between the groups was statistically significant (not shown). Those whose parents did not receive social assistance exited social assistance sooner than those whose parents received social assistance. However, the difference between the curves was not constant across the spell lengths. The difference between the curves shows a general tendency to narrow over time when the length of spells increases and exit rates decrease. During the very first months, however, the difference between the curves increased slightly. The smaller group differences in both very short and very long spells imply that selection can play a role when examining social assistance dynamics by parental social assistance receipt.
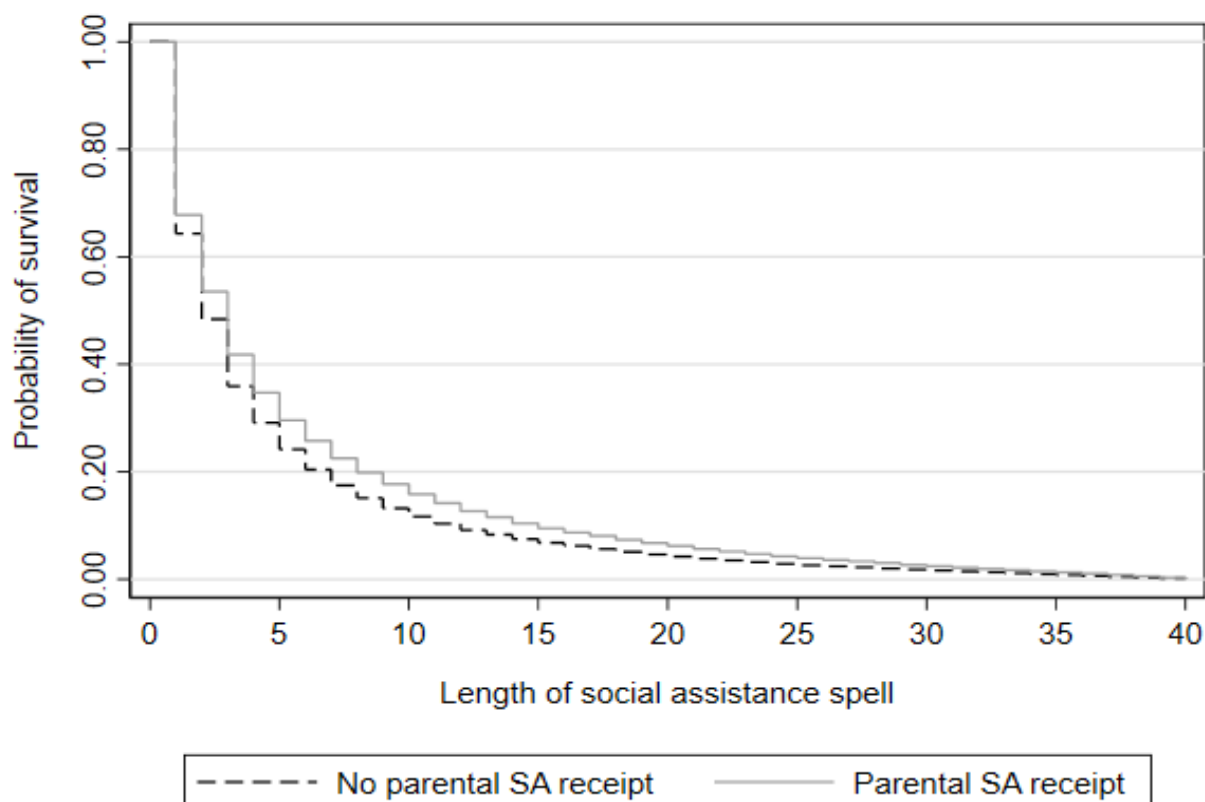
Figure 2. Kaplan-Meier survival curve: the probability of exiting social assistance among young adults aged 19–29 by parental social assistance receipt, pooled data including all spells. Note: the follow-up is restricted to 40 months.

Multivariate analyses

The aim of the multivariate models was to analyse the effects of spell duration and parental social assistance receipt and their interaction when considering both observed and unobserved factors. Pooled logistic, random-effect logistic and fixed-effect logistic discrete-time event-history models were estimated. The estimates illustrated in the regression tables (Tables 3 and 4) are odds ratios. Odds ratios below 1 indicate lower odds of exiting and ratios greater than 1 higher odds of exiting compared to a reference group. In the case of continuous variables, odds ratios refer to a situation where an independent variable increases by one unit. It should be noted that comparisons of odds ratios between nested models involve certain problems (e.g. Norton and Dowd, 2018). However, average marginal effects cannot be meaningfully calculated for FE logistic regression without additional assumptions, and therefore odds ratios are preferable in this case (Norton and Dowd, 2018). For this reason, the interpretation below focuses on general patterns (see also the section on reliability analyses).

For pooled logistic and RE logistic models, the following models were estimated (Table 3): model with a duration variable and a variable for calendar month (models 1 and 6); models with an additional variable for parental social assistance receipt and its confounders (models 2 and 7); models including an additional variable for interaction between parental social assistance receipt

and duration (models 4 and 9). Additionally, models both without (models 3 and 8) and with (models 5 and 10) interaction but with observed characteristics were estimated.

The pooled logistic models illustrate the associations between the variables of interest and social assistance exit when controlling for observed characteristics but not considering interdependencies between spells among recipients. The pooled logistic models (models 1–5) showed that the longer the spell, the less likely it is for an individual to exit social assistance even when observed characteristics are controlled for. When the length of social assistance spells doubles, it decreases the odds of exiting by a factor of 0.64 (model with all control variables). The estimates for the duration variables between the different models were rather similar. According to the pooled models, the effect of parental social assistance receipt did not seem to vary by the duration of social assistance receipt. Parental social assistance receipt was associated with a lower likelihood of exiting social assistance even when controlling for both time-varying and time-invariant observed characteristics. In a model with parental social assistance receipt and other variables for parental background (model 2), the odds for exiting social assistance were 11.5 % lower for those whose parents received social assistance.

RE models allow for the possibility that individuals can have multiple spells in the dataset. Furthermore, individual unobserved heterogeneity can be taken into account. It follows that, compared to the pooled logistic model, these models bring us closer to the question of whether duration dependence is '*spurious*' or '*genuine*'. However, the assumptions regarding unobserved heterogeneity are strong in RE models. In general, the estimates obtained from the RE models (models 6–10) resembled those found in the pooled logistic models (Table 3). The model including only variables for duration and calendar month showed that around 9% of the propensity to exit social assistance can be attributed to individuals. The estimates for duration dependence were slightly lower than in the pooled logistic models, although the magnitude of the duration effects was still large. A social assistance spell twice as long in duration decreased the odds of exiting by a factor of around 0.7. Again, no statistically significant interaction was found between parental social assistance receipt and spell duration. Controlling for confounders of parental social assistance receipt as well as unobserved heterogeneity, the odds for exiting social assistance were 16.4 % lower for those whose parents received social assistance (model 7) and 10.7% lower if observed time-varying individual characteristics were also controlled for (Model 8).

FE models give the most accurate answers to the research questions of this study. Allowing for the possibility of multiple spells among recipients and considering all time-invariant individual characteristics, these models help to address selection bias. It is also important to note the within-individual interpretation of the estimates. It can be argued that this interpretation is more closely related to the causal question of whether there is duration dependence in social assistance (cf. between-individual variation used in the other models). The FE models included only individuals who experienced an exit during the follow-up and had at least one spell longer than one month in duration. All in all, a direct comparison of FE estimates with pooled and RE estimates is not recommendable.

In the FE models (Table 4, models 11–14), the odds ratio for the duration variable was below 1 but not to a great extent. These estimates were still statistically significant, implying '*genuine*' duration

dependence. Doubling the length of a spell reduces the odds of exiting by a factor of around 0.95 when controlling for time-varying observed characteristics (model 12). The reliability analyses (see below), however, showed that some other measurement choices resulted in a slightly larger effect size.

Contrary to pooled and RE models, the FE models revealed statistically significant interaction between parental social assistance receipt and the duration variable (models 13 and 14). The estimates show that those whose parents received social assistance exhibited stronger duration dependence than those whose parents were not recipients. The duration effect for those whose parents did not receive social assistance can be multiplied by a factor of around 0.9. The statistically significant and larger interaction effect in the FE models implies that time-invariant unobserved characteristics suppress the true relationship between parental social assistance receipt and the duration of social assistance spell (cf. pooled and RE models).

Table 3. Discrete-time logistic and random-effect logistic models. Exit from social assistance as a dependent variable, odds ratios.

	Logistic models					Random-effect logistic models				
	Model 1	Model 2	Model 3	Model4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Length of social assistance spell (log)	0.620*** (0.001)	0.623*** (0.001)	0.640*** (0.002)	0.621*** (0.002)	0.639*** (0.002)	0.700*** (0.003)	0.701*** (0.002)	0.703*** (0.002)	0.702*** (0.003)	0.704*** (0.003)
Parental social assistance receipt (ref: no parental receipt)		0.885*** (0.008)	0.920*** (0.008)	0.869*** (0.011)	0.913*** (0.012)		0.836*** (0.012)	0.893*** (0.012)	0.843*** (0.014)	0.901*** (0.014)
Parental social assistance receipt * Length of social assistance spell (log)				1.010 (0.005)	1.004 (0.005)				0.995 (0.006)	0.995 (0.006)
Observations	636 937	636 937	636 937	636 937	636 937	636 937	636 937	636 937	636 937	636 937
Individuals						35 580	35 580	35 580	35 580	35 580
Log likelihood	-260764.0	-260303.5	-257546.9	-260301.7	-257546.6	-259016.8	-258626.6	-256442.8	-258626.2	-256442.4
LR Chi^2	54334.5***	55255.5***	60768.6***	55259.2***	60769.2***					
Wald Chi^2						15926.0***	17554.1***	25267.0***	17547.0***	25255.0***
AIC	521554.1	520645.0	515151.9	520643.3	515153.3	518061.6	517293.1	512945.7	517294.4	512946.8
BIC	521701.8	520860.9	515481.4	520870.6	515494.2	518220.7	517520.4	513286.6	517533.1	513299.1
sigma_u						0.5754	0.5640	0.4778	0.5643	0.4781
rho						0.0914	0.0882	0.0649	0.0883	0.0650
LR test of rho						3494.5***	3353.8***	2208.2***	3350.9***	2208.5***

Models 1 and 6 include a control variable for calendar month.
Models 2–5 and 7–10 include control variables for calendar month, highest parental educational attainment, parental unemployment, and whether parental family was a single parent family.
Models 3, 5, 8, and 10 additionally include control variables for gender, household type, highest educational attainment, country of birth, a variable for whether the sample person was living in the parental home, and a variable for whether the sample person was living in a rural municipality.
Standard errors in parentheses.
* p < 0.05, ** p < 0.01, *** p < 0.001

Table 4. Discrete-time fixed-effect logistic models. Exit from social assistance as a dependent variable, odds ratios.

| | Fixed-effect logistic models | | | |
	Model 11	Model 12	Model 13	Model 14
Length of social assistance spell (log)	0.939*** (0.003)	0.946*** (0.003)	0.967*** (0.004)	0.974*** (0.004)
Parental social assistance receipt * Length of social assistance spell (log)			0.906*** (0.006)	0.907*** (0.006)
Observations	613 406	613 406	613 406	613 406
Individuals	27 941	27 941	27 941	27 941
Log likelihood	-189815.7	-189408.4	-189711.1	-189306.5
LR Chi2	4380.1***	5194.6***	4589.2***	5398.5***
AIC	379655.3	378856.7	379448.1	378654.9
BIC	379791.2	379083.3	379595.4	378892.8

Models 11 and 13 include a control variable for calendar month.

Models 12 and 14 include control variables for calendar month, household type, highest educational attainment, age in months, a variable for whether the sample person was living in the parental home, and a variable for whether the sample person was living in a rural municipality.

Standard errors in parentheses.

$^{*} p < 0.05, ^{**} p < 0.01, ^{***} p < 0.001$

Reliability analyses

Various additional analyses were conducted to evaluate the reliability of the event-history models. The models were estimated as linear probability models, but this did not affect the conclusions. Controlling for the ordinal number of a spell (either as a continuous or categorical variable) did not affect the findings. When time-varying independent variables received a value based on the closest annual data point, the results obtained were the same as those reported. Assigning the last spell during the year of death as right-censored did not affect the estimates. As a reliability analysis, the analyses were conducted considering gaps of one months as exits. Pooled logistic models revealed a statistically significant interaction, indicating that those whose parents did not receive social assistance had stronger duration effects. However, the odds ratio was only marginally above 1 (OR 1.01 in a model with all control variables). Additionally, in the FE models the magnitude of '*genuine*' duration dependence was stronger than reported in Table 4 (OR 0.88 in a model with time-varying control variables). The magnitude of the duration effects was also greater when FE models were conducted using only individuals with more than one spell of social assistance (OR 0.90 in a model with all control variables). This reliability analysis was conducted since the estimates for FE models presuppose within-individual variation, and for time-varying control variables this occurred only between spells.

Summary

The descriptive analyses in this study indicated that both short-term and long-term social assistance receipt is relatively common at some point of young adulthood in Finland. There were clear indications that the likelihood of exiting social assistance decreases as the length of time spent in social assistance increases. Furthermore, as hypothesised, young adults whose parents had received social assistance are more likely to stay in social assistance for longer period of times.

Event-history regression models made it possible to control for observed and unobserved characteristics and to take account of the possibility of multiple spells. As expected, negative duration dependence is overestimated when unobserved heterogeneity is not taken into account. Unobserved characteristics appear to be particularly important. The inclusion of all time-invariant characteristics in FE models substantially reduced but did not remove the duration effects. In other words, there were signs of '*genuine*' duration dependence.

As expected, parental social assistance receipt was associated with lower odds of exiting social assistance even when controlling for individual characteristics. Additionally, FE models showed that duration dependence is stronger among those young adults whose parents had received social assistance. In other words, parental social assistance receipt is associated not only with young adults' lower likelihood of exiting social assistance, but also with how spell duration affects the likelihood of exiting. This finding was only found when controlling for all time-invariant characteristics. Possible explanations include that selection into both very short and long spells of social assistance explained by unobserved characteristics can hide how parental recipiency is associated with duration dependence among offspring. It is important to note, though, that individuals included in the FE analyses needed to have at least one spell over one month in duration. This limits the generalisability of this finding.

Discussion and conclusions

Welfare traps and negative duration dependence in social assistance are subjects of wide academic and public interest. The welfare dependence of young individuals is an area of particular concern. As the likelihood of social assistance exit can be affected not only by the duration of assistance receipt but also by individual characteristics, it is important to consider how controlling for observed and unobserved characteristics affects the wider picture. This study analysed the dynamics of social assistance receipt among young adults in Finland using register data with full monthly history of recipiency.

This study set out to investigate the relative roles of individual characteristics and social assistance receipt *per se* in explaining long-term recipiency. The findings revealed signs of '*genuine*' duration dependence among young adults. However, this study cannot shed light on the mechanisms through which social assistance receipt itself affects the future likelihood of recipiency. In any case, it seems that observed and unobserved individual characteristics (selection bias) do not to fully explain duration dependence, although there are indications that negative duration dependence has much to do with unobserved characteristics. These characteristics can be related, for instance, to disadvantages in the parental family (e.g. health and social problems), which have been shown to be important in explaining the intergenerational correlation of social assistance (e.g. Stenberg, 2000; Ringbäck Weitoft et al., 2008). Future studies should seek to control for all time-invariant characteristics in order to account for selection bias – an approach rarely used in research so far.

Studies have shown that disadvantages experienced during young adulthood can have long-term effects across the life course (see e.g. Scarpetta, Sonnet and Manfredi, 2010). This means that if social assistance can *per se* cause future recipiency during young adulthood, social assistance receipt can potentially have an independent effect over the whole life course. The finding that exit rates decrease over time and that some young individuals may become long-term recipients have important policy implications. While universal approaches are important for young adults, it is important to ensure that the most disadvantaged of them receive social and health services when they need them. Furthermore, it is crucial to support the transition from social assistance to educational pathways.

Another concern in this study was to investigate the effects of parental social assistance receipt with regard to both the likelihood of exiting social assistance and duration dependence among offspring. Parental social assistance receipt was associated with a lower likelihood of exiting social assistance. When controlling for all time-invariant characteristics, parental recipiency seemed to be linked with stronger duration dependence. The conclusion this suggests is that time-invariant unobserved characteristics suppress the true relationship between parental social assistance receipt and the duration of the social assistance spell. These findings should be taken into account when analysing the intergenerational transmission of social assistance. At any given point in time, long-term recipients of social assistance are always overrepresented. This can lead to overestimation of the intergenerational correlation since it is more likely for the recipiency of those whose parents received social assistance to be included in the data. On the other hand, the standard approaches for intergenerational correlations do not consider the effects of parental recipiency on how offspring

recipiency at a given point in time affects their future recipiency. Thus, the overall impact of parental recipiency can be underestimated.

The empirical approach used in this study had certain limitations. Due to missing information on parental background, many immigrants were excluded from the study. Also, it is possible that some time-varying factors were omitted that may be associated with duration dependence. In particular, there can be important relationships between different dimensions of disadvantage. Furthermore, variables for time-varying characteristics could not be measured as precisely as social assistance receipt.

Social assistance receipt – as other dynamic processes – is a difficult subject to address in a longitudinal setting since the patterns identified are heavily shaped by individual characteristics. This means that descriptive analyses, while important, are not sufficient for making judgements about system-level consequences. Furthermore, there are strong grounds for studying social assistance dynamics using monthly instead of annual information. It is important that future studies give greater weight to providing more accurate measurements of recipiency.

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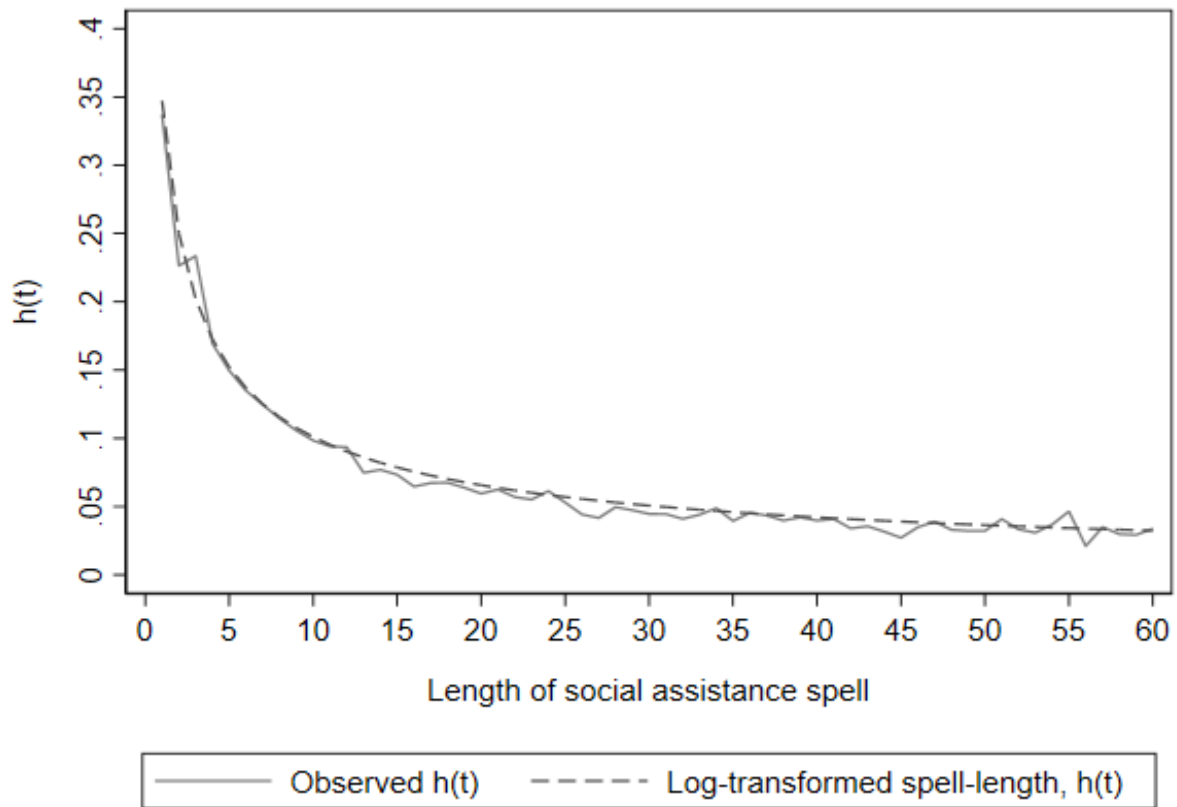
Figure A1. Observed hazard rates and predicted hazard rates from the model with logarithmic transformation of the duration variable. Note: the follow-up is restricted to 60 months.