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### Abstract

This study examined the association between parental work schedules and non-parental childcare arrangements among dual-earner families in Finland, the Netherlands and the UK. Data from the 'Families 24/7' web-survey were used, including 937 parents with children aged 0-12 years.

Results showed a negative association between non-standard work and formal childcare across all countries. A similar association was found for using a combination of formal and informal childcare, whereas solely using informal childcare was not associated with work characteristics. Country differences showed that, compared with Finland, the probability of using formal childcare was lower in the Netherlands, whereas the probability of using informal childcare was higher in the UK. Interaction effects showed that the negative association between non-standard work and formal childcare was stronger in the Netherlands, compared with Finland. Also, the positive association between working hours and formal childcare was weaker for Dutch and British parents.

This study identified the challenges that parents face when arranging childcare outside of office hours. Although the supply of formal childcare seems to be insufficient, using informal childcare introduces other potential problems. Because a considerable proportion of employees work non-standard hours, governments should help these parents in meeting their need for high quality childcare.

**Keywords:** childcare, parental work schedules, non-standard working hours, comparative research

## Introduction

Parents encounter various challenges and difficulties in arranging their daily family life, such as matching their work schedules with the opening hours of childcare centres (Rönkä & Korvela, 2009). These challenges may be especially difficult when one or both parents work during so-called non-standard or atypical hours (Strazdins, Clements, Korda, Broom, & D'Souza, 2006), but at the same time these parents may plan their hours in such a way that they maximize parental coverage of children (Presser, 2003). Recent statistics show that a considerable proportion of employees work outside traditional office hours; EU averages range from 17.6% for shift work, to 27.2% for evening and night work, and 39.7% for weekend work (EU Labour Force Survey, 2012a). Taking into account the increasing proportion of dual-earner families (Margherita, O'Dorchai, & Bosch, 2009), this implies that significant numbers of European families need to arrange childcare outside of standard service hours. Hence, the aim of this study was to examine the associations between parental work schedules and non-parental childcare arrangements.

Previous research has centred on the impact of non-standard work on employees and their families, examining outcomes such as parental well-being (Liu, Wang, Keesler, & Schneider, 2011), relationship conflict and instability (Presser, 2000), and parent-child interaction (Mills & Täht, 2010). Less is known about parents' demands and opportunities with regard to non-parental childcare. Comparing parents working standard and non-standard hours is specifically interesting, because formal childcare is more available to the former group (Plantenga & Remery, 2009). In addition to comparing parents' use of different *types* of childcare, we studied the *variability* and *time* spent in childcare. It is relevant to study multiple aspects of childcare, because variations in the quality, type and amount of childcare are related to differences in child

well-being. For example, Bradley and Vandell (2007) showed that children who were cared for in childcare centres obtained higher cognitive and social outcomes, compared with children cared for by family members. Yet, children who were in childcare for 30 or more hours per week had an increased risk of behavioural problems. In addition, Morrissey (2009) showed that increases in the number of childcare arrangements were related to increases in children's problem behaviour. These findings stress the relevance of examining the determinants of childcare arrangements.

### **Background**

Non-parental childcare is an important aspect in the daily lives of many parents, because it facilitates the combination of work and family life (Craig & Powell, 2012). Previous studies have shown that parents often use a combination of formal and informal childcare. Formal childcare can be defined as care provided by professionals, such as in a childcare centre (OECD Family Database, 2011), whereas informal childcare entails care provided by relatives or friends (Duncan, Edwards, Reynolds, & Alldred, 2004). Some have argued that if parents use multiple forms of childcare (e.g., formal *and* informal care, or care provided by grandparents *and* friends) this indicates that arranging appropriate childcare is challenging (Chaudry et al., 2011). Because of the limited availability of childcare centres that are open during atypical hours (Presser, 2003), these childcare challenges increase when parents work outside traditional office hours. Non-standard working parents have to rely on informal care, which in turn can mean that they have to use multiple caregivers to cover their working hours.

Parents can also use their non-standard working hours as a conscious strategy to maximize parental care through 'split-shift parenting' (Presser, 2003), hereby reducing parents'

need for non-parental childcare. Due to differences in demands and possibilities, childcare arrangements are likely to differ between parents working standard and non-standard schedules. These differences, however, seem to be contingent upon country context, mainly because the provision of formal childcare varies between countries (Kröger, 2010).

Work schedules and access to formal childcare services are not the only factors affecting parental childcare use. Other contextual factors such as cultural norms have to be taken into account as well (Sayer & Gornick, 2011). Because parental demands and opportunities might vary between countries due to existing cultural norms, it is relevant to study these decisions in a comparative perspective. Some comparative studies on childcare use are available (e.g., Kröger, 2010; Mamolo, Coppola, & Di Cesare, 2011), but these studies primarily focused on the type of childcare used.

In this paper, we add to existing knowledge by exploring not only associations between parental work schedules and the type of childcare used, but also by examining differences with regards to the variability within childcare arrangements, and the number of hours children spend in childcare. We proceed in two steps. First, we use statistics of the EU Labour Force Survey (2012a, 2012b) to describe the employment patterns in the three countries involved. Second, we utilize data from the ‘Families 24/7’ study to examine cross-national differences in the associations between parental work schedules and childcare arrangements.

### ***Length and timing of paid work in Finland, the Netherlands and the UK***

Table 1 provides an overview of recent employment patterns in Finland, the Netherlands and the UK, obtained from the EU Labour Force Survey. This survey, provided by Eurostat, is conducted in 33 European countries and includes data on labour participation of people aged 15 and over.

In this survey, parental status is defined as living with at least one child aged less than 15, or a dependent child aged 15-24. Table 1 presents the length and timing of paid work, because both factors affect childcare needs. The number of hours parents work partly determines how many hours of childcare parents need (Mamolo et al., 2011), whereas their work schedule might be associated with the type of childcare that is available (Liu & Anderson, 2012).

<Table 1 about here>

Although nowadays women's labour force participation is common and widely accepted in many Western countries, there is still clear variation in employment rates between Finland, the Netherlands and the UK. Table 1 shows that maternal employment rates are quite similar in the Netherlands and Finland, but considerably lower in the UK. Paternal employment rates are substantially higher, but also show some variation, with Dutch fathers having the highest employment rate and British fathers the lowest.

The differences between the countries are further highlighted when looking at the number of hours worked. Only a small percentage of Finnish mothers work part-time (<35 hours per week), whereas this is the case for more than half of British mothers and more than four-fifths of Dutch mothers. For fathers, the differences concerning part-time employment are smaller, but still substantial, with only a small proportion of the Finnish fathers working part-time, whereas this is more common in the UK and the Netherlands.

Patterns in the timing of work also vary between the countries. Because the EU Labour Force Survey does not distinguish between parents and non-parents in the reports of non-standard work, we restricted the sample to employees aged 25 to 49, the age range wherein it is most likely to have children living at home. If we zoom in on non-standard hours, Table 1 shows that less than 15% of male and female employees in the Netherlands work shifts. In Finland, one

fourth of women and one fifth of men are involved in shift work, with the UK lying in-between these two countries. Evening work is far more common in the Netherlands, with over 25% of women and men reporting that they work during evenings. For Finland, these proportions are somewhat lower, and British employees work least during evenings. Night work is not common in any of the three countries, but the proportions are highest in Finland. Saturday work for women is most common in the Netherlands, where almost 25% reported working on Saturdays. The proportions in Finland and the UK are somewhat lower, with around one fifth of women involved in Saturday work. British men work most on Saturdays, which is less common around Dutch and Finnish men. The percentages for work on Sundays are lower than for work on Saturday, but again highest in the Netherlands for women, closely followed by Finnish and British women. Again, British men work most on Sundays, whereas the percentages are slightly lower for Dutch and Finnish men.

In addition to the length and timing of paid work, it is important to consider the stability in parental work schedules, because having a schedule that changes regularly might make it difficult to arrange formal childcare. Informal childcare, on the other hand, is perceived to be more flexible (Bakker & Karsten, 2013). Focusing solely on parental work schedules, however, gives too limited a view on the association with non-parental childcare. To fully understand the opportunities and constraints parental work schedules pose in each country, the supply of childcare services and cultural norms also need to be taken into consideration.

### ***Childcare services and norms regarding the use of formal childcare***

Non-parental childcare enrolment rates indicate that, for children under the age of three, enrolment is highest in the Netherlands (45%), followed by the UK (30%) and Finland (27%)

(Plantenga & Remery, 2009). However, Finnish children primarily spend more than 30 hours per week in childcare, while this amount is lower for Dutch and British children. Also, Finnish children spend their time mostly in formal childcare, whereas more than half of the Dutch and more than one third of the British children are placed in informal childcare. The patterns for children aged three until the mandatory school age looks similar, although the non-parental childcare enrolment rates in all three countries are higher (varying between 80-90%).

In Finland, formal childcare for children under school age is guaranteed by law and is heavily subsidized by the government, while care at home is also subsidized (Finnish Ministry of Social Affairs and Health, 2013). Formal childcare is organized in family childcare (in the homes of childcare providers) and in childcare centres. Due to the availability of childcare leave, almost 63% of children under the age of three are looked after at home (mostly by their mother), after which children attend a childcare centre or family childcare. When children turn six, they are entitled to 20 hours per week of free preschool education for one year, after which they start school. Opening hours of childcare centres vary from normal hours (7am to 5 pm) to extended hours and 24/7 childcare. In 62% of the municipalities parental demands for day-and-night care are met (Plantenga & Remery, 2009). The costs for childcare depend on the size and the income of the family; parents pay on average 15% of the total childcare costs, with payment varying between approximately €264 and €2904 per year for the first child, with costs diminishing slightly for subsequent children (Plantenga & Remery, 2009; STM, 2013). Non-parental childcare is widely accepted in Finland (Salmi, 2006), although periodically there are lively public debates over whether parents (mothers) should stay at home. This has similarities with the ‘mommy wars’ in the US (Craig & Powell, 2013), although in Finland the focus lies particularly on children under the age of three.

In the UK, over 920,000 new publicly subsidised or funded childcare places have been created since the 1998 National Childcare Strategy. Nevertheless, the availability and affordability of childcare remains problematic and the system is experienced as complicated (Fagan & Norman, 2012). In addition, although local authorities in the UK have a duty to ensure sufficient childcare, they often fail to meet these needs, for example due to non-standard working hours of parents (Singler, 2011). There is as yet little support from the government for childcare centres to extend their opening hours, and very few centres are open before 8am or after 6pm. A small number of child-minders offer services outside these hours, and they tend to be expensive (Statham & Mooney, 2003). Only parents living in deprived areas have access to free childcare, but all children aged 3 and 4 have access to free early education for 15 hours a week. The government does offer some financial support to parents on low incomes through the Working Tax Credit, which can cover up to 70% of childcare costs, while some employers offer childcare vouchers. These however only go so far, especially as childcare in the UK remains the most expensive in Europe. In 2013, the average yearly cost for 50 hours of childcare per week was €13,000 (£11,000) (Daycare Trust & Family and Parenting Institute, 2013). The use of formal childcare is less accepted than in Finland, particularly among working-class mothers (Fagan & Norman, 2012), and many British parents rely on informal care by, for example, grandparents or friends. However, this form of care is not free of problems either, as it might not always be reliable or available when needed.

The involvement of the Dutch government concerning childcare takes a middle position between Finland and the UK. Dutch children do not have a legal right to childcare, but childcare is partly subsidized by the government (dependent on family income). However, childcare is not universal and especially rural areas can suffer from a lack of available childcare. This is an

unanticipated effect of the 2005 Child Care Act, which introduced market forces to the childcare sector (Noailly & Visser, 2009). Formal childcare possibilities for under school-aged children (under the age of 4) include childcare centres and child-minders. Just as in the UK, the Dutch government does not actively stimulate childcare services outside office hours, although there are some centres that offer extended opening hours or even 24/7 childcare. This is, however, minimal when compared with the Finnish system, leaving Dutch parents who work non-standard hours dependent on informal care. In 2011, Dutch parents paid on average €7,300 per year for childcare, of which the majority is covered by the childcare allowance parents receive from the government; parents' own contribution is on average €2,000 (Dutch Bureau of Statistics, 2011). Regarding norms on non-parental childcare use, the majority of Dutch people feel that spending several days per week in childcare is not good for a child, although the acceptance increases when the age of the child increases (Merens, Hartgers, Van den Brakel, 2012). This is in line with the norm that Dutch mothers should work relatively limited hours (Mills & Täht, 2010). Indeed, almost 40% of people in both the Netherlands and the UK think that pre-school children are likely to suffer if their mother works (Pfau-Effinger, 2008). Interestingly, in Finland this figure is only a few percentage points lower, namely just over 35%, showing that norms about childcare use not always translate directly to the decisions families make.

Whereas most research usually focuses on childcare for pre-school aged children, where provision varies greatly among the countries as detailed above, a focus on school-aged children is also necessary. Due to the limited school hours during primary school, many working parents have to find appropriate before and after school care (Barnett, Gareis, Sabbatini, & Carter, 2010). Although there are variations in the provision of such care between Finland, the Netherlands and the UK (Finnish National Board of Education, 2011; Daycare Trust, 2012; Dutch Government,

2013), in all three countries childcare for school-aged children is mainly available during standard working hours, causing problems for parents working non-standard hours. For this reason, we extended prior research by also examining care of school-aged children, by including children up to the age of 12 years.

### ***Research focus***

For this paper we examined parents' childcare arrangements and compared the likelihood of using parental care with that of formal childcare, informal childcare and a combination of formal and informal childcare, hereby focusing on dual-earner couples. In addition, we examined differences in the variability within childcare arrangements, and the time children spend in childcare. We formulated three hypotheses, focusing on individual-level mechanisms, the effects of country of residence on childcare, and on the variation of individual-level mechanisms across countries.

*Individual-level mechanisms.* Due to the lack of formal childcare services offering extended opening hours in the UK and the Netherlands, and the fact that these services are insufficient in Finland, we expected that non-standard work schedules were negatively related to formal childcare use, and positively related to the use of informal childcare or a combination of these two (Hypothesis 1a). Following the same logic, we expected that working non-standard hours was related to fewer hours in formal childcare (Hypothesis 1b) and more variability in childcare arrangements (Hypothesis 1c). Regarding parental working hours, we expected a positive association with the use of non-parental childcare and the hours children spent in childcare (Hypothesis 1d). Lastly, for all countries we expected that regular changes to parental

work schedule were related to more use (and more hours) of informal childcare (Hypothesis 1e), because this form of childcare is perceived to be more flexible (Bakker & Karsten, 2013).

*Effects of country of residence.* We expected that the country context would have a direct impact on parents' childcare use, because country-specific norms and childcare facilities affect parents' opportunities and constraints. Finnish parents are likely to make most use of formal childcare (Hypothesis 2a), as formal childcare is widely accepted and heavily subsidized, and most parents work full-time. Following the same logic, we expected most hours and least variability in Finnish childcare arrangements (Hypothesis 2b). In the UK, parents may be more likely (compared with Finland) to use informal childcare and a combination of formal/informal childcare (Hypothesis 2c), due to the complex and expensive formal childcare system. Also, we expected more variability in British childcare arrangements, compared with Finland (Hypothesis 2d). Lastly, due to the significant number of British women working part-time, British children are expected to spend less time in childcare than Finnish children (Hypothesis 2e). For Dutch parents we expected a middle position in the use of non-parental childcare, as Dutch formal childcare is better regulated than in the UK but less well than in Finland. Therefore we expected more formal use and less informal childcare use or a combination of childcare (and therefore less variability) than in the UK (Hypothesis 2f). Because the Netherlands has the highest proportion of part-time working parents, we expected Dutch children to spend the least hours in childcare (Hypothesis 2g).

*Cross-country variations of individual-level mechanisms.* We hypothesized the individual-level mechanisms to vary across countries. Starting with non-standard schedules and the type of childcare used by parents, we expected the negative association between non-standard schedule and formal childcare use to be weakest in Finland (Hypothesis 3a). Finnish parents

have more access to 24/7 childcare and non-parental childcare use is widely accepted. Moreover, this effect is likely to be stronger in the Netherlands, because Dutch parents have fewer opportunities for formal childcare outside office hours and non-parental childcare is less accepted. This suggests a stronger *negative* effect of non-standard work on formal childcare use, and a *positive* effect on informal or combination care as compared to Finland (Hypothesis 3b). The negative effect of non-standard work on formal childcare use is hypothesized to be even stronger in the UK, compared to the Netherlands, because formal childcare outside office hours is practically non-existent and non-parental childcare is less accepted (Hypothesis 3c). Regarding working hours and the type of care used by parents, we hypothesized that the positive association between working hours and formal childcare use to be strongest in Finland (Hypothesis 3d). In a similar vein, we expected the positive effect of working hours on informal childcare and on the combination of formal and informal care to be weakest in Finland, somewhat stronger in the Netherlands, and strongest in the UK, due to the lower supply of formal childcare and the conservative cultural norms in the last two countries (Hypothesis 3e). Lastly, concerning the association between changes in work schedules and type of childcare used, we hypothesized that the positive effect of changes in work schedules on informal childcare use to be strongest in Finland (Hypothesis 3f), as parents in the UK and in the Netherlands already use a significant amount of informal childcare.

## **Methodology**

### ***Design and procedure***

This paper analysed data from the cross-national study ‘Families 24/7’ targeted to Finnish, British and Dutch working parents with children aged between 0-12 years who worked either

standard or non-standard hours. Respondents were recruited via childcare organizations, unions and employers, which were invited by letter or email to promote the study. The cooperating institutions were not selected randomly in all countries (only in the Netherlands were childcare organizations selected randomly); we therefore have no random sample of parents with young children. Because in Finland day-and-night childcare centres were invited to participate, which are rare or non-existent in the other two countries, it is likely that non-standard working parents in Finland were overrepresented in our data. We were also not able to evaluate the response rate.

Data collection took place between November 2012 and January 2013 using a web-survey. Because the same survey was used in three countries, the survey questionnaire was first prepared in English, and later translated into Finnish and Dutch. Some of the questions included in the questionnaire were obtained from existing surveys, for which we used existing translations from the national surveys. For the questions with no existing translation, back-translation was used.

### ***Respondents***

Our total sample consisted of 1,294 parents and was restricted in three steps. First, 141 respondents were excluded because they reported not having a partner. Second, 148 respondents were excluded because of non-employment of either the respondent or his/her partner. Third, 68 respondents provided no information about their working time pattern, resulting in a sample of 937 dual-earning parents (316 from Finland, 304 from the Netherlands and 317 from the UK).

Respondents' age ranged between 22 and 58 years ( $M = 36.68$ ,  $SD = 5.71$ ). The majority of the sample was female (82.4%) and either married/in a civil partnership (73.6%) or cohabitating (24.9%). The majority of the respondents (69.7%) had completed at least post-

secondary education. For some of the childcare questions, respondents were asked to think about one specific child, the so-called ‘target child’ (the child closest to the age of 4). The target child’s age varied between 0 and 12 years ( $M = 4.12$ ,  $SD = 2.67$ ). The majority of the respondents had one (35.1%) or two (48.5%) children.

### ***Measures***

#### *Parental work schedule*

Respondents’ *work schedule* was assessed with the question ‘What is your working time pattern?’. There were seven response categories (e.g., regular day work or irregular working hours). The responses were categorized into two groups: day work schedule and non-standard schedule (including evening/night/morning work, irregular work, shift work and other work schedules). In addition, respondents were asked whether *changes to their work schedule* occurred regularly (1= *yes*, 0= *no*) and about their *working hours*, referring to the actual hours worked per week.

#### *Childcare arrangements*

In the first step, respondents were asked which out of 16 forms of childcare they used (for more than one hour) during their latest working day. In the second step, respondents were asked to provide the start and end time of each form of care they used, between 00.00 and 23.59. The different forms of childcare were divided in three groups: childcare at home (e.g., ‘My child was at home cared for by a relative’), professional childcare outside the home (e.g., ‘My child was in a nursery’) and other childcare outside the home (e.g., ‘My child was cared for outside the home by a family friend’). From this 24h childcare diary, the *type of care* used, the *variability* within

the childcare arrangements, and the *time* children spent in childcare in hours per day were computed.

For the type of care used, a categorical variable was computed with four categories: parental care, formal childcare, informal childcare, and a combination of formal and informal childcare. For the variability, the different forms of childcare used by parents were counted separately for formal and informal childcare. The total time spent in childcare was calculated by summing the time spent in childcare, separately for formal and informal care.

#### *Control variables*

We controlled for the gender of the respondent (1= *female*), respondents' monthly earnings (1= *less than €2,000/ £1,800*) and education (1= *post-secondary education or more*), the number of children living at home (1= *three or more children*), and the age of the target child. We expected that parents' use of non-parental childcare was reduced when they had more children (more likely that mothers are not employed) (OECD Family Database, 2009), a lower income, lower education levels and had an older target child (more likely that a child can be alone for short periods) (Casper & Smith, 2004). Because we acknowledge that, when arranging childcare, the work schedule of the partner is an important factor to consider, we included a dummy representing the partner's work schedule (1= *non-standard*). Lastly, because the sample of the current study was recruited via different channels, namely via childcare organisations, unions and employers, we also included way of recruitment as a control variable in our analyses. Two dummies were used, for childcare organisations and unions, with employers being the reference category.

### *Analytical strategy*

Associations between type of childcare used and parental work schedules were examined using multinomial logistic regression. This type of analysis is used when the dependent variable is categorical, with three or more categories (Hosmer & Lemeshow, 2000). The dependent variable in this analysis (*type of childcare*) includes four categories: parental childcare (reference category), formal childcare, informal childcare, and a combination of formal and informal childcare. Main effects were analysed first, after which separate models were estimated including multiple interaction terms. In order to avoid entering too many variables in the interaction models, we included the interaction terms in sets, while retaining the other independent and control variables. The first model included two interaction terms, between work schedule and the country dummies. In the second and third model, the same approach was used, including interactions with either working hours or changes to work schedule and the country dummies. In the second part of the analysis, concerning the variability and time spent in formal and informal childcare, we applied the same procedure using multivariate multiple regression. Two separate analyses were performed, one focusing on variability and one focusing on time spent in childcare.

## **Results**

### *Descriptives*

Table 2 presents the means and standard deviations of the independent, dependent and control variables, and distinguishes between Finland, the Netherlands and the UK. In Finland, the majority of the respondents had a non-standard work schedule, whereas the opposite was the case in the Netherlands and the UK. Weekly working hours were highest in Finland, closely

followed by the UK and lowest in the Netherlands. Only 12% of the Dutch respondents responded that changes in work schedules occurred regularly, whereas this was the case for more than one third of the Finnish and British respondents. Comparable data suggest that Finnish non-standard working parents were overrepresented in our sample and Dutch and British non-standard working parents somewhat underrepresented (Presser, Gornick, & Parashar, 2008). Weekly working hours were comparable with recent statistics from the EU Labour Force Survey (2012b). For Finland and the UK, the percentages of respondents who reported that changes to their work schedule occurred regularly are similar to data of the 2010 European Working Condition Survey, while for the Dutch respondents this percentage is slightly lower (Eurofound, 2012).

<Table 2 about here>

Descriptive statistics of the dependent variables show that the majority of the parents in all countries used only formal childcare. Solely using informal childcare was far less common, especially in Finland. This is as expected, due to the extensive formal childcare system in Finland. Using a combination of formal and informal childcare was also not common in Finland, whereas British and Dutch parents used this option somewhat more often which is also in line with our expectations. In contrast to our expectations, there were only small differences between countries concerning the variability within childcare arrangements; for all countries variability was higher in informal childcare. Finnish and Dutch children spent a total just over 8 hours per day in non-parental childcare, while British children spent about half an hour less in childcare. For the Netherlands this is not as expected; we hypothesized that Dutch children would spend the least hours in childcare, due to the large proportion of part-time working parents. Time spent in

formal childcare was highest in Finland, whereas Dutch children spent most time in informal childcare.

Descriptive statistics of the control variables show that the age of the target child varies slightly between countries, which is probably related to the way in which parents were recruited to the study. For example, Dutch children were youngest, and the majority of Dutch respondents were recruited via childcare organisations. Lastly, the dummy representing partner's work schedule indicates that non-standard work was again most prevalent in Finland.

### ***Explanatory analyses: Type of childcare used***

Table 3 shows the results of the multinomial logistic regression analysis including only the main effects, in which the likelihood of using formal childcare, informal childcare or a combination of these is presented relative to the likelihood of relying on parental childcare. To calculate the effect of work schedule, we compared non-standard working parents with parents with a standard work schedule in their use of different types of non-parental childcare (relative to parental care). Results show that having a non-standard work schedule was associated with a decrease in the odds of using formal childcare ( $OR = 0.38, p = .002$ ; as compared with parental care). This indicates that when parents have a non-standard work schedule the likelihood of using formal childcare is reduced. More precisely, the predicted probability of using formal childcare is almost 1.5 times higher for parents with a standard work schedule, compared with parents with a non-standard work schedule. This finding is in line with Hypothesis 1a, because in all three countries the supply of childcare services outside office hours is limited compared with the supply during office hours. In addition, weekly working hours were positively associated with the likelihood of using formal childcare ( $OR = 0.03, p = .047$ ). This finding is in line with

Hypothesis 1d, although the effect is quite small. Lastly, the odds of using formal childcare were significantly lower for Dutch parents ( $OR = 0.37, p = .011$ ), compared with Finnish parents, which is in line with Hypothesis 2a.

<Table 3 about here>

Second, the likelihood of using informal childcare (instead of parental care) seems not to be associated with work characteristics. The country context yielded a direct effect on informal childcare use, as the odds of using informal childcare were higher for British parents ( $OR = 4.08, p = .026$ ), compared with Finnish parents. This corresponds with Hypotheses 2c, because we expected British parents to use more informal care compared with Finnish parents.

Third, having a non-standard work schedule was negatively associated with the likelihood of using a combination of formal and informal childcare ( $OR = 0.50, p = .071$ ), although this effect was only marginally significant. This result indicates that when parents have a non-standard work schedule, they are less likely to use a combination of formal and informal childcare, which is in contrast to Hypothesis 1a. No further significant effects were found of either work characteristics or country for predicting the odds of using a combination of formal and informal childcare.

Few of the control variables yielded a significant effect on childcare use. The effects that did reach significance were in line with our expectations, for example, having an older target child decreased the odds of using non-parental childcare (compared with parental care). A similar effect was found for having a partner with a non-standard work schedule, although this effect was only marginally significant. Surprisingly, parents' monthly earnings and education were not associated with type of childcare used.

Next, we estimated three additional models in which the interaction terms between the work variables and country were included. By estimating these additional models, we could test whether the main effects differ between the three countries. The results of these analyses are presented in Table 4.

<Table 4 about here>

Results showed a significant negative interaction between non-standard work and living in the Netherlands regarding the use of formal childcare (compared with Finland;  $OR = 0.16, p = .081$ ). The negative coefficient indicates that the negative association between non-standard work and formal childcare use is stronger when parents are from the Netherlands. This corresponds with Hypothesis 3b; we expected the effect of non-standard work to be more negative in the Netherlands (compared with Finland) due to the limited availability of around-the-clock childcare and the fact that formal childcare is less accepted in the Netherlands.

Second, results showed a significant negative interaction between working hours and living in the Netherlands (compared with Finland;  $OR = 0.85, p = <.001$ ) and living in the UK (compared with Finland,  $OR = 0.93, p = .090$ ) concerning the use of formal childcare. This finding corresponds with Hypothesis 3d. The negative coefficients indicate that the positive association between working hours and the use of formal childcare was weaker both in the Netherlands and in the UK, compared with Finland. For example, in Finland the increase in the odds of using formal childcare between a non-standard working parent working 20 and 50 hours per week was 0.79, while the same difference in working hours resulted in *decrease* of 0.14 in the odds of using formal care in the Netherlands. We found a similar effect concerning the likelihood of using a combination of formal and informal childcare ( $OR = 0.92, p = .043$ ) for Dutch parents. This result is partly in line with Hypothesis 3e, as we did not find a similar effect

for the UK, and is possibly related to the restrictive cultural norms about non-parental care in the Netherlands.

Third, we found a significant negative interaction between changes to work schedule and living in the UK, for the use of informal childcare (compared with Finland;  $OR = 0.06, p = .049$ ). This indicates that the negative association between having a regularly changing work schedule and informal childcare use is stronger in the UK. This is in contrast to Hypothesis 3f, as we expected a positive association between changes in parents' work schedule and the use of informal childcare.

#### ***Explanatory analyses: Variability and time spent in childcare***

We continued the analyses for the variability and the time spent in formal and informal childcare, using the same variables for predicting the type of childcare. However, results (not shown) indicated that the explained variance of these models was very low: 4% (formal) and 3% (informal) for variability and 6% (formal) and 2% (informal) for time in childcare.

Regarding the variability, only one effect reached significance, showing that there was more variability in British informal childcare compared with Finland ( $B = 0.05, SE B = 0.03, \eta_p^2 = .008, p = .046$ ). Although this difference is statistically significant, the effect is so small that it becomes negligible. For time spent in childcare, only marginally significant results were found, which were again small in size. It would therefore appear that variability and time spent in childcare are not associated with the work variables in our data.

## **Discussion**

The focus of this study was to examine the association between parental work schedules and non-parental childcare arrangements among dual-earner families in Finland, the Netherlands and the UK. We looked into within and between country differences, and were particularly interested in the association between non-standard working hours and childcare arrangements. The study analysed three countries that differ quite distinctively on their provision and organization of childcare services, especially concerning services outside office hours.

Just as expected, given the universal nature of Finnish childcare policy, as well as the fact that Finnish parents pay the lowest proportion of childcare costs, Finnish parents in our study relied more on formal childcare than British and Dutch parents. Finnish children also spent most hours in childcare, though the difference was not as substantial as assumed based on the full-time working culture in Finland. On average, Finnish children spent only up to 30 minutes per day more time in formal day-care compared with British and Dutch children. It was particularly surprising that there was a relatively high reliance on formal childcare among British parents too. This indicates that regardless of the issues concerning affordability and availability, formal childcare was essential for many working British parents. The finding that British parents with regularly changing work schedules used less informal childcare was also surprising. Possibly, working a regularly changing schedule complicates the use of any type of non-parental childcare, because it is hard to organize childcare on short notice (Statham & Mooney, 2003). Lastly, across countries we unexpectedly found that working a non-standard schedule reduced parents' use of a combination of formal and informal childcare. It is possible that the lack of formal childcare outside office hours makes it harder for non-standard working parents to use a combination of formal and informal childcare. More research is needed to explain these unexpected findings.

The 'Families 24/7' survey was conducted with the aim of getting detailed information on parents working non-standard hours. For the purposes of our research project it was necessary to collect information on parental working hours and on where and how children under the age of 13 are being cared for. It was not possible to get this information from any existing datasets. There are some limitations with our data which should be considered when thinking of the implications of this study. These are related to the recruitment of the sample and the use of a web-survey. First of all, the sample used in our study was not randomly selected. In cross-national web-surveys, the sample selection strategies are of special interest because the aim is to get data as comparable as possible. To ensure this we made our recruitment strategies as similar as possible. The three countries, however, differed in one central way. Because only Finland systematically provides formal childcare outside office hours, it was easiest to recruit Finnish non-standard working parents, who are therefore over-represented in our dataset (Presser et al., 2008). Second, the challenge with the web-survey we used is that we cannot control the response rate (Couper, 2000). Response rates are of critical interest in survey studies, because the greater the response the more likely it is that the study will accurately estimate the parameters of the population sampled (Dillman, Eltinge, Groves, & Little, 2002). Web surveys usually have a lower response rate than traditional mail surveys (Couper, 2000). Accordingly, there is a risk of non-response bias, that is, those who respond differ from non-respondents in a systematic way. In our study, however, we used several tactics to be able to control the sample and response rate: the web-survey was administrated to a special target group via childcare centres, work places and unions. To increase our knowledge about the respondents we asked them where they had heard about the study and included this information as control variable in our analyses.

On the basis of our findings we would like to underline three issues as main implications for policy makers and future research. The first one is related to the availability of formal childcare outside office hours. The fact that non-standard work schedules were found to reduce formal childcare use can be explained in two ways. It is possible that, as explained by Presser (2003), parents use their working hours to maximize parental care. However, additional analyses (not shown) revealed no increase in parental care for parents working non-standard hours. Therefore, it is likely that the supply of childcare at atypical hours is insufficient. Although informal childcare can, for example, support building a positive intergenerational relationship between a grand-child and -parent, it is also associated with a risk if the child misses out on early childhood education, which has been found to be beneficial to child development (Dowsett, Huston, Imes, & Gennetian, 2008). Aiming to reduce parents' difficulties in finding appropriate childcare, the governments in these countries should seek possibilities in organizing good quality formal childcare outside office hours. There is however also a lack of information on the availability (and quality) of childcare services outside of the usual office hours as well as on the effects of day-and-night care on children's well-being. Moreover, it seems that we still lack in-depth information on the cultural norms concerning childcare and the appropriate length and timing of childcare. It is clear that, besides cost and availability, cultural norms affect parental decisions on childcare.

A second issue we wish to underline is that work schedules have important implications for the degree of variability in childcare arrangements. Our data showed that British children in particular experienced a low continuity of care. We expected that this was because British parents have trouble finding childcare outside of office hours, but British non-standard working parents did not report lower formal childcare use (compared with Finnish parents). The low

continuity in care possibly entails that parents have to combine multiple care arrangements, making the organisation of childcare and the family's daily life a more complex (and stressful) endeavour for these parents. In addition, the high variability also renders these arrangements at greater risk of disruption, for example if a carer falls ill. Because multiple care arrangements are associated with children's problem behaviour (Morrissey, 2009), we encourage future studies to examine this variability in care arrangements more closely.

Third, because our study points to the importance of work characteristics in arranging childcare, we believe future research should pay more attention to work-family policies in studying childcare arrangements. Arranging childcare is not only a question of meeting the preferences and needs of families, but also about what is possible when combining family and work. For example, if parents can adjust their working hours, or are allowed to work from home, their childcare needs may change. Studying work-family policies was beyond the scope of this article, therefore, future research is needed to examine how such policies affect parents' use of non-parental childcare. Because work-family policies are likely to differ between countries, a cross-national perspective is desirable.

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Table 1

*Employment patterns in Finland, the Netherlands and the UK*

	Finland		The Netherlands		UK	
	Women	Men	Women	Men	Women	Men
Parental employment rate (per cent) <sup>a</sup>	77.2	88.8	77.9	92.3	67.4	86.9
Parental part-time employment (per cent) <sup>a</sup>	13.9	3.3	85.0	14.9	54.5	9.0
Shift work (per cent of total employees) <sup>b</sup>	25.2	20.5	7.1	10.0	16.3	21.0
Evening work (per cent of total employees) <sup>b</sup>	20.1	20.0	25.4	27.3	8.5	11.5
Night work (per cent of total employees) <sup>b</sup>	7.4	10.8	6.8	11.3	4.6	8.0
Work on Saturdays (per cent of total employees) <sup>b</sup>	19.7	17.1	23.3	20.8	21.3	29.3
Work on Sundays (per cent of total employees) <sup>b</sup>	14.4	13.6	18.0	14.1	14.5	19.1

Source: EU Labour Force Survey 2012a and 2012b.

<sup>a</sup> Parental status is determined as having at least one child aged less than 15 living at home, or a dependent child aged 15-24. <sup>b</sup> Only for employees aged 25-49, the age range within which it is most likely to have children living at home.

Table 2

*Descriptive statistics of model variables*

	Finland ( <i>n</i> = 316)	The Netherlands ( <i>n</i> = 304)	UK ( <i>n</i> = 317)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
<i>Independent variables</i>			
Work schedule (0 = standard/1 = non-standard)	0.72 (0.45)	0.30 (0.46)	0.24 (0.43)
Weekly working hours	36.93 (8.33)	30.51 (8.88)	35.99 (10.82)
Regular changes to work schedule (0 = no/1 = yes)	0.36 (0.48)	0.12 (0.33)	0.35 (0.48)
<i>Dependent variables</i>			
Type of childcare used (0 = no/1 = yes)			
Only parental care	0.17 (0.38)	0.16 (0.37)	0.13 (0.34)
Formal childcare	0.68 (0.47)	0.54 (0.50)	0.59 (0.49)
Informal childcare	0.05 (0.22)	0.13 (0.34)	0.15 (0.35)
Combination formal/informal	0.10 (0.30)	0.17 (0.38)	0.13 (0.33)
Total variability in non-parental childcare	1.21 (0.42)	1.21 (0.47)	1.27 (0.58)
Variability in formal childcare <sup>a</sup>	1.11 (0.30)	1.05 (0.14)	1.09 (0.26)
Variability in informal childcare <sup>b</sup>	1.18 (0.11)	1.16 (0.17)	1.21 (0.24)
Total hours in non-parental childcare	8.24 (2.89)	8.28 (4.44)	7.47 (3.86)
Hours spent in formal childcare <sup>a</sup>	7.87 (2.15)	7.28 (3.06)	6.92 (3.18)
Hours spent in informal childcare <sup>b</sup>	6.86 (1.66)	7.04 (1.83)	6.86 (2.13)
<i>Control variables</i>			
Sex (0 = male/1 = female)	0.79 (0.41)	0.86 (0.35)	0.83 (0.38)
Monthly earnings (0 = more than €2,000/ £1,800/ 1 = less than €2,000/ £1,800)	0.42 (0.49)	0.54 (0.50)	0.56 (0.50)
Education (0 = less than post-secondary education/ 1 = post-secondary education or more)	0.41 (0.49)	0.72 (0.45)	0.97 (0.18)
Children living at home (0 = 1 or 2/1 = 3 or more)	0.21 (0.41)	0.16 (0.37)	0.11 (0.32)
Age target child (in years)	4.68 (2.52)	3.33 (2.47)	4.33 (2.82)
Work schedule partner (0 = standard/1 = non- standard)	0.52 (0.50)	0.22 (0.41)	0.29 (0.45)
Way of recruitment (0 = no/1 = yes)			
Via childcare organization	0.53 (0.50)	0.94 (0.24)	0.20 (0.40)
Via union	0.00 (0.00)	0.05 (0.22)	0.17 (0.38)
Via employer	0.47 (0.50)	0.01 (0.09)	0.63 (0.49)

<sup>a</sup> Calculated using only respondents who reported using formal childcare.

<sup>b</sup> Calculated using only respondents who reported using informal childcare.

Table 3

*Multinomial logistic regression results of the associations between parental work characteristics and the type of childcare used*

*(reference = parental childcare; N = 937)*

	Formal childcare (n = 539)			Informal childcare (n = 112)			Combination formal/informal (n = 132)		
	<i>B</i> ( <i>SE</i> )	<i>OR</i>	95% CI	<i>B</i> ( <i>SE</i> )	<i>OR</i>	95% CI	<i>B</i> ( <i>SE</i> )	<i>OR</i>	95% CI
Intercept	0.35 (0.87)			-1.35 (1.29)			0.86 (1.05)		
<i>Independent variables</i>									
Work schedule (0 = standard/1 = non-standard)	-0.97 (0.32)**	0.38	[0.20, 0.71]	-0.71 (0.45)	0.49	[0.21, 1.18]	-0.70 (0.39)†	0.50	[0.23, 1.06]
Weekly working hours	0.03 (0.02)*	1.03	[1.00, 1.07]	0.00 (0.02)	1.00	[0.96, 1.05]	-0.01 (0.02)	0.99	[0.95, 1.03]
Regular changes to work schedule (0 = no/1 = yes)	0.27 (0.33)	1.31	[0.69, 2.48]	0.44 (0.46)	1.55	[0.63, 3.82]	0.58 (0.39)	1.78	[0.83, 3.84]
Country (reference = Finland)									
NL	-0.99 (0.39)*	0.37	[0.17, 0.80]	0.44 (0.62)	1.55	[0.46, 5.25]	0.34 (0.50)	1.41	[0.53, 3.75]
UK	-0.27 (0.44)	0.77	[0.33, 1.79]	1.41 (0.63)*	4.08	[1.18, 14.06]	0.56 (0.53)	1.74	[0.62, 4.93]
<i>Control variables</i>									
Sex (0 = male/1 = female)	1.51 (0.35)***	4.53	[2.29, 8.96]	0.51 (0.49)	1.66	[0.64, 4.31]	0.79 (0.43)†	2.20	[0.94, 5.14]
Monthly earnings (0 = more than €2,000/ £1,800/ 1 = less than €2000/ £1800)	-0.33 (0.31)	0.72	[0.39, 1.30]	-0.24 (0.42)	0.78	[0.34, 1.80]	-0.65 (0.37)	0.52	[0.25, 1.08]
Education (0 = less than post-secondary education/ 1 = post-secondary education or more)	0.25 (0.32)	1.28	[0.68, 2.41]	0.35 (0.51)	1.42	[0.52, 3.85]	-0.20 (0.40)	0.82	[0.37, 1.80]
Children living at home (0 = 1 to 3/1 = 3 or more)	0.09 (0.39)	1.10	[0.51, 2.35]	-0.22 (0.60)	0.81	[0.25, 2.61]	-0.36 (0.53)	0.70	[0.25, 1.97]
Age target child (in years)	-0.12 (0.06)*	0.88	[0.79, 0.99]	-0.01 (0.08)	0.99	[0.85, 1.16]	-0.12 (0.08)	0.89	[0.77, 1.03]
Work schedule partner (0 = standard/1 = non- standard)	-0.56 (0.31)†	0.57	[0.31, 1.04]	-0.62 (0.45)	0.54	[0.22, 1.30]	-0.04 (0.37)	0.91	[0.47, 1.98]
Way of recruitment (reference = via employer)									
Via childcare organisation	0.56 (0.39)	1.75	[0.82, 3.73]	0.31 (0.59)	1.36	[0.43, 4.32]	-0.36 (0.49)	0.70	[0.27, 1.84]
Via union	-0.12 (0.64)	0.88	[0.25, 3.09]	-0.19 (0.79)	0.83	[0.18, 3.84]	-0.72 (0.80)	0.49	[0.10, 2.34]

*Note.* *OR* = odds ratio; *CI* = confidence interval. Nagelkerke  $R^2 = .19$ . † =  $p < .10$ ; \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$ .

Table 4

*Multinomial logistic regression results of the associations between parental work characteristics and the type of childcare used, including interaction terms between parental work characteristics and country (reference = parental childcare; N = 937)*

	Formal childcare (n = 539)			Informal childcare (n = 112)			Combination formal/informal (n = 132)		
	<i>B (SE)</i>	<i>OR</i>	95% CI	<i>B (SE)</i>	<i>OR</i>	95% CI	<i>B (SE)</i>	<i>OR</i>	95% CI
<i>Model 1<sup>a</sup></i>									
Intercept	2.18 (2.25)			-3.10 (3.97)			2.60 (2.74)		
Work schedule (0 = standard/1 = non-standard)	-0.81 (0.67)**	0.16	[0.04, 0.60]	-0.35 (1.27)	0.70	[0.06, 8.39]	-1.25 (0.82)	0.29	[0.06, 1.44]
Country (reference = Finland)									
NL	-0.62 (0.71)*	0.20	[0.05, 0.80]	0.92 (1.27)	2.52	[0.21, 3.08]	-0.18 (0.88)	0.84	[0.15, 4.65]
UK	-0.59 (0.80)	0.55	[0.12, 2.64]	1.86 (1.30)	6.43	[0.50, 8.10]	0.09 (0.95)	1.10	[0.17, 7.02]
Work schedule * NL	-1.07 (0.78) <sup>†</sup>	0.26	[0.06, 1.19]	0.50 (1.41)	1.65	[0.10, 6.03]	-0.66 (0.96)	0.52	[0.08, 3.41]
Work schedule * UK	-0.11 (0.96)	0.90	[0.14, 5.86]	0.76 (1.50)	2.13	[0.11, 4.02]	-0.64 (1.13)	0.53	[0.06, 4.85]
<i>Model 2<sup>b</sup></i>									
Intercept	-2.31 (0.16)			-2.63 (2.10)			0.52 (1.16)		
Weekly working hours	0.12 (0.03)***	1.12	[1.06, 1.19]	0.05 (0.05)	1.05	[0.95, 1.16]	0.01 (0.03)	1.01	[0.96, 1.06]
Country (reference = Finland)									
NL	-0.54 (0.43)	0.58	[0.25, 1.36]	0.64 (0.68)	1.89	[0.50, 7.18]	0.43 (0.51)	1.53	[0.56, 4.19]
UK	-0.41 (0.46)	0.66	[0.27, 1.61]	1.22 (0.65) <sup>†</sup>	3.39	[0.95, 12.13]	0.33 (0.56)	1.39	[0.47, 4.13]
Working hours * NL	-0.16 (0.04)***	0.85	[0.79, 0.92]	-0.10 (0.06)	0.91	[0.81, 1.02]	-0.08 (0.04)*	0.92	[0.86, 1.00]
Working hours * UK	-0.07 (0.04) <sup>†</sup>	0.93	[0.86, 1.01]	-0.04 (0.06)	0.97	[0.85, 1.09]	0.02 (0.04)	1.02	[0.93, 1.11]
<i>Model 3<sup>c</sup></i>									
Intercept	1.97 (1.70)			3.39 (3.09)			2.43 (2.10)		
Regular changes to work schedule (0 = no/1 = yes)	-0.04 (0.45)	0.97	[0.40, 2.31]	-1.08 (1.15)	0.34	[0.04, 3.23]	0.27 (0.60)	1.31	[0.41, 4.24]
Country (reference = Finland)									
NL	-1.12 (0.44)**	0.33	[0.14, 0.77]	-0.03 (0.68)	0.97	[0.26, 3.67]	0.27 (0.57)	1.31	[0.43, 3.99]
UK	-0.64 (0.50)	0.53	[0.20, 1.40]	0.59 (0.72)	1.81	[0.44, 7.43]	0.06 (0.64)	1.06	[0.31, 3.68]
Changes * NL	-0.21 (0.75)	0.81	[0.19, 3.51]	-1.42 (1.41)	0.24	[0.02, 3.87]	0.17 (0.94)	1.19	[0.19, 7.41]
Changes * UK	-1.23 (0.86)	0.29	[0.05, 1.58]	-2.78 (1.42)*	0.06	[0.00, 0.99]	-1.53 (1.01)	0.22	[0.03, 1.56]

*Note.* This table represents results of the effects of interaction terms between work characteristics and country dummies on the type of childcare used by parents. In addition to the variables presented in the table, the same set of independent and control variables was entered as in Table 3. *OR* = odds ratio; *CI* = confidence interval. <sup>a</sup> Nagelkerke  $R^2 = .19$ . <sup>b</sup> Nagelkerke  $R^2 = .23$ . <sup>c</sup> Nagelkerke  $R^2 = .20$ . <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ .