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Article

Do flexicurity policies protect workers from the adverse health consequences of temporary employment? A cross-national comparative analysis



Faraz Vahid Shahidi^{a,*}, Deborah De Moortel^b, Carles Muntaner^{a,c}, Owen Davis^d, Arjumand Siddiqi^{a,e}

^a Dalla Lana School of Public Health, University of Toronto, Toronto, Canada

^b Interface Demography, Department of Sociology, Vrije Universiteit Brussel, Brussels, Belgium

^c Bloomberg School of Nursing, University of Toronto, Toronto, Canada

^d School of Social Policy, Sociology and Social Research, University of Kent, UK

^e Gillings School of Public Health, University of North Carolina, Chapel Hill, United States

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ABSTRACT

Flexicurity policies comprise a relatively novel approach to the regulation of work and welfare that aims to combine labour market flexibility with social security. Advocates of this approach argue that, by striking the right balance between flexibility and security, flexicurity policies allow firms to take advantage of loose contractual arrangements in an increasingly competitive economic environment while simultaneously protecting workers from the adverse health and social consequences of flexible forms of employment. In this study, we use multilevel Poisson regression models to test the theoretical claim of the flexicurity approach using data for 23 countries across three waves of the European Social Survey. We construct an institutional typology of labour market regulation and social security to evaluate whether inequalities in self-reported health and limiting longstanding illness between temporary workers and their permanent counterparts are smaller in countries that most closely approximate the ideal type described by advocates of the flexicurity approach. Our results indicate that, while the association between temporary employment and health varies across countries, institutional configurations of labour market regulation and social security do not provide a meaningful explanation for this cross-national variation. Contrary to the expectations of the flexicurity hypothesis, our data do not indicate that employment-related inequalities are smaller in countries that approximate the flexicurity approach. We discuss potential explanations for these findings and conclude that there remains a relative lack of evidence in support of the theoretical claims of the flexicurity approach.

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1. Introduction

In contemporary debates over the future of work and welfare, it has become common practice to suggest that the governments of advanced capitalist economies face an increasingly difficult bind between two conflicting sets of demands (Wilthagen & Tros, 2004). On the one hand, due to real or perceived changes in the structure of the global economy, there is a growing demand among employers for more flexible labour market arrangements that allow them to hire and fire workers with fewer restrictions and costs. On the other hand, workers continue to advocate for the provision of generous and comprehensive levels of social

protection in order to offset the insecurity that results from such arrangements.

In recent years, the notion of flexicurity has been introduced by a diverse range of social and political actors as a seemingly effective means of resolving this difficult bind and bridging the divide between these conflicting sets of expectations (Auer, 2010; Burrone & Keune, 2011; Muffels & Wilthagen, 2013). Flexicurity describes a relatively novel approach to the regulation of the work-welfare nexus that aims to combine labour market flexibility through loose contractual regulations with adequate levels of social security. Although this policy configuration requires workers to make concessions around job security, the approach is said to offset the impact of labour market deregulation through the use of active labour market policies that promote employability and generous income replacement measures that compensate for short spells of unemployment.

* Corresponding author.

E-mail address: faraz.vahidshahidi@utoronto.ca (F.V. Shahidi).

The flexicurity approach deviates from the traditional view that flexibility and security are incompatible (Vosko, 2006). It suggests, instead, that powerful complementarities can be forged between the two. By striking the right balance between flexibility and security, advocates of the flexicurity approach argue that flexicurity policies are capable of securing both the demands of capital for flexibility and the demands of labour for security (e.g. European Commission, 2010; Organization for Economic Co-operation and Development, 2013). On this basis, they argue that labour market regulations can be relaxed without causing concomitant harms to the welfare of individual workers.

Despite having far-reaching implications, the theoretical claims of the flexicurity approach have gone largely-untested (Afzal, Muntaner, Chung, 2013; Burchell, 2009). Thus, it is as of yet unclear whether governments can pursue labour market flexibility without compromising—among other things—the health and well-being of workers. Drawing on a multilevel modeling strategy, our study aims to evaluate this theoretical claim, with a specific focus on inequalities in self-reported health and limiting long-standing illness between temporary workers and their permanently-employed counterparts. Ultimately, we are interested in examining whether and to what extent flexicurity policies attenuate the health-related consequences associated with temporary employment.

2. The rise of flexible employment conditions

In the years immediately following the Second World War, European employment and social policies were dramatically transformed (Huber & Stephens, 2001). Western European countries, in particular, developed expansive labour market regulations and comprehensive social security policies to protect workers from a diverse range of socio-economic risks (e.g. unemployment) that increasingly came to be viewed as structural features of the operation of markets under capitalism (Esping-Andersen, 1990). These institutional transformations were fuelled by favourable macro-economic conditions and relatively strong labour movements whose political demands for protection became increasingly difficult to ignore. It is within this broad historical context that the “standard employment relationship” emerged (Quinlan, Mayhew & Bohle, 2001). The standard model of employment describes permanent, full-time employment that provides generous benefits and relatively strong levels of job security.

By the middle of the 1970s, a series of economic crises replaced earlier trajectories of prosperity and uninterrupted growth with rapidly rising levels of unemployment and declining rates of profitability. This end to the so-called “golden age of capitalism” signalled a fundamental shift both in the institutional makeup of advanced capitalist countries and the relative balance of power between capital and labour (Bambra, Netuveli & Eikemo, 2010; Huber & Stephens, 2001). As a result of these shifts, labour market regulations, and the welfare state more generally, were increasingly viewed as institutional distortions that interfered with the proper functioning of capitalist markets. Neoliberal reforms were presented as necessary remedies for persistent levels of economic stagnation and unemployment (Glyn, 2006).

The expansion of flexible forms of employment conditions was a direct consequence of these neoliberal reform efforts (Quinlan et al., 2001). Employers argued that labour market rigidities restricting flexible hiring and firing practices undermined the ability for firms to adapt their labour force to rapid changes in market demand and, by extension, undermined their prospects for success in an increasingly competitive global economy. The governments of advanced capitalist countries, responding to the growing political power of capital, committed themselves to deregulating

labour markets and loosening restrictions on hiring and firing (Emmenegger, 2009). To varying extents, national governments stripped their labour markets of alleged rigidities and, as a consequence, paved the way for a rise of flexible forms of employment conditions, including temporary employment contracts (Auer & Cazes, 2003).

Not surprisingly, the growth of flexible employment conditions has attracted the attention of public health scholars, who argue that these changes have negatively impacted the health and well-being of the labour force. In the remainder of this paper, we focus specifically on the health consequences of temporary employment.

3. The social and health consequences of temporary employment

Employment conditions are important determinants of health (Muntaner, Chung & Solar, 2010a). As labour market flexibilization has led to a substantial erosion in the quality and stability of employment conditions (Kalleberg, 2009), the need to account for these determinants of health has increased over time (Benach & Muntaner, 2007). Public health researchers have drawn on the concept of precariousness as a way of capturing the adverse health-related consequences of changing employment conditions (Vives, Amable & Ferrer, 2010). They have described at least five pathways that are assumed to link flexible—and, more specifically, temporary—employment to health (Benavides, Benach & Muntaner, 2006; Muntaner, Solar & Vanroelen, 2010b).

3.1. Continuity

Temporary employment is characterized by higher levels of job insecurity (Lewchuk, Clarke & de Wolff, 2008). There is strong evidence of a causal relationship between job insecurity, discontinuous employment histories, and health (Sirviö, Ek & Jokelainen, 2012). Specifically, compared to those in stable and secure employment, workers that report facing an objective or subjective threat of job loss exhibit worse physical and mental health outcomes.

3.2. Earnings

Temporary employment may lead to unpredictable or insufficient levels of earnings, resulting in cumulative and chronic exposures to economic deprivation and financial strain (Ferrie, Shipley & Newman, 2005). Such experiences are, in turn, associated with material and psychosocial stressors, of which the negative consequences for health are well-documented in the existing literature (Kahn & Pearlin, 2006).

3.3. Legal protection

Labour laws designed to protect workers are often organized around the standard model of permanent employment. Many are therefore poorly suited to protect workers employed on temporary contracts. As a result, temporary workers may be denied statutory protections, including the right to refuse unsafe work (Benavides et al., 2006). Furthermore, they are less likely to be protected against unhealthy working conditions through such mechanisms as labour legislation, collective bargaining, and union membership (Benach, Vives & Amable, 2014).

3.4. Benefits

Many of the social policies of advanced capitalist countries are premised on a template of permanent employment that does not

fit with the reality of contemporary employment experiences (Clasen & Clegg, 2011). Due to their discontinuous and irregular work histories, temporary workers are often ineligible (or only partially eligible) to receive social security benefits that provide protection against socio-economic risks, including unemployment, sickness, disability, and retirement (Emmenegger, Häusermann & Palier, 2012). The health-promoting potential of social security benefits is well-established (Cylus and Glymour, 2015). By extension, the absence of social security coverage poses a significant risk to the health and well-being of temporary workers.

3.5. Power

The power relationships under which temporary employees work differ dramatically from those that characterize standard employment contracts. In particular, the former experience disproportionately lower levels of control over various features of their immediate workplace environments, such as the pace, content, and organization of work (Gallagher, 2005). The experience of feeling powerless at one's place of employment has been identified as an important psychosocial stressor that is associated with a range of adverse health outcomes (Bosmans, De Cuyper & Hardonk, 2015).

Notwithstanding these established pathways linking temporary employment to adverse physical and mental health outcomes, empirical research on the health effects of temporary employment has generated mixed findings (Benach et al., 2014; Virtanen, Kivimäki & Joensuu, 2005). Inconsistencies have emerged, for example, between studies that report worse health outcomes (e.g. Benavides, Duran & Gimeno, 2015; Inoue, Minami & Yano, 2014; Kim, Khang & Muntaner, 2008; Minelli, Pignini & Chiavarini, 2014; Pirani and Salvini, 2015; Quesnel-Vallée, DeHane & Ciampi, 2010; Waenerlund et al., 2011) and those that report similar or better outcomes among temporary workers (e.g. Bardasi & Francesconi, 2004; De Moortel, Vandenheede & Vanroelen, 2014; Liukkonen, Virtanen & Kivimäki, 2004; Virtanen, Vahtera & Kivimäki, 2002).

The contradictory findings generated by this body of scholarship have given rise to a number of scientific and policy questions regarding the health effects of temporary employment. Chief among these is whether the observed inconsistency in research findings is explained by systematic differences in the individual experience of temporary employment across national contexts. In a recent review of empirical studies on the health effects of flexible employment, Kim, Muntaner, and Shahidi (2012) note that the adverse health-related consequences of flexible employment appear to be more pronounced in countries characterized by liberal welfare state arrangements and less pronounced in countries that display more social democratic welfare state characteristics. This evidence of systematic, cross-national differences in the association between flexible employment and health suggests that there is a need for public health researchers to better account for the effect on this association of the national context in which it takes place. Indeed, prior research has demonstrated the critical importance of national institutional configurations in shaping the magnitude of employment-related health inequalities (Bambra & Eikemo, 2009; McLeod, Hall & Siddiqi, 2012). This body of scholarship suggests that policies generous in their purpose and comprehensive in their scope have the potential to attenuate the harmful consequences of adverse labour market conditions, including flexibility.

4. Enter flexicurity

The governments of advanced capitalist countries have engaged in a calculated search for a new regulatory model that is

capable of reconciling the seemingly contradictory demands they face from employers for greater labour market flexibility and workers for social security. According to advocates of the flexicurity approach, flexibility and security are not contradictory policy objectives but rather complementary agendas that can be pursued simultaneously and in a synergistic fashion (Wilthagen & Tros, 2004).

The flexicurity approach claims to offer an institutional blueprint for non-precarious forms of flexibility. This blueprint suggests that the link between flexible employment and negative health and social outcomes can be interrupted and even overcome through the provision of generous and comprehensive social security measures (Bosch, 2004; MacAllister, Nylén & Backhans, 2016). The approach therefore presents itself as a framework according to which social security systems can attenuate the adverse health consequences associated with increasingly flexible labour markets. At the core of this institutional blueprint lie three key dimensions of social intervention (Bekker & Wilthagen, 2008).

First, the framework suggests that extensive levels of employment protection legislation that restrict the ability for employers to use diverse hiring and firing practices are viewed as obstacles to labour market inclusion. Accordingly, it describes the need for loose contractual arrangements that encourage labour market entry and re-entry, particularly among the most vulnerable segments of the population. This is to be achieved, for example, by relaxing the conditions that allow for lawful dismissals or lowering the level of sanctions associated with the use of unlawful dismissals. Second, the framework encourages the implementation of comprehensive active labour market policies to promote employability and adaptability among workers. These include the creation of job training schemes, the expansion of public employment services, or the use of public employment subsidies. Finally, the framework calls for inclusive social protection systems that provide adequate compensation for the loss of income associated with unemployment. For instance, governments can enact reforms to increase the generosity or population coverage of unemployment benefits.

Drawing on this institutional blueprint, advocates of the approach suggest that flexicurity policies can operate as effective buffers against the adverse health and social consequences associated with temporary employment. It is assumed, in other words, that by promoting employability, adaptability, and compensation for the experience of unemployment, flexicurity policies will allow workers to better cope with flexible employment conditions (Berglund, Furåker & Vulkan, 2014; Sjöberg, 2010).

While there is no shortage of debate surrounding the theoretical basis of the flexicurity approach (Burroni & Keune, 2011), there is a lack of evidence to support its core argument that governments can pursue greater labour market flexibility without sacrificing the health and well-being of its workers (Afzal et al., 2013). Our paper aims to fill this gap in the literature by testing the hypothesis that employment-related health inequalities between temporary workers and their permanently-employed counterparts are smaller in countries that pursue the institutional blueprint described by advocates of the flexicurity approach.

5. Methods

5.1. Data

Individual-level data were retrieved from waves 4, 5, and 6 of the European Social Survey (ESS) (2008/2010/2012). The ESS is a survey conducted every two years that collects comparable cross-national data on social and political attitudes and outcomes in Europe. Observations were collected from three waves of the ESS

Table 1
Descriptive Characteristics of the Study Sample (ESS 2008–2012).

Country	N	Type of Contract (%)		Age	Sex (%)	
		Permanent	Temporary		Male	Female
Austria	1869	91.1	8.9	39.8	49.6	50.4
Belgium	2221	90.1	9.9	40.7	50.3	49.7
Bulgaria	2288	85.0	15.0	44.5	44.4	55.6
Czech Republic	2688	85.5	14.5	42.2	54.8	45.2
Denmark	2246	92.0	8.0	43.9	50.4	49.6
Estonia	2498	91.0	9.0	42.5	43.3	56.7
Finland	2682	86.4	13.6	42.9	50.8	49.2
France	2474	87.5	12.5	41.6	47.0	53.0
Germany	3836	86.1	13.9	42.7	53.2	46.8
Greece	1012	85.5	14.5	39.1	45.4	54.6
Hungary	1950	86.7	13.3	40.7	47.8	52.2
Ireland	1644	79.7	20.3	40.1	42.9	57.1
Lithuania	1323	89.4	10.6	43.3	40.1	59.9
Netherlands	2459	83.8	16.2	41.9	48.1	51.9
Norway	2601	89.9	10.1	42.2	54.1	45.9
Poland	1960	70.8	29.2	39.1	52.3	47.7
Portugal	1809	83.3	16.7	40.5	45.4	54.6
Slovakia	2083	88.3	11.7	42.8	44.9	55.1
Slovenia	1532	82.8	17.2	40.5	49.7	50.3
Spain	2292	77.5	22.5	40.1	53.1	46.9
Sweden	2511	90.0	10.0	42.5	49.0	51.0
Switzerland	2354	93.3	6.7	41.5	51.5	48.5
United Kingdom	2516	89.9	10.1	41.6	44.5	55.5

in order to ensure an adequate number of countries for the meaningful operationalization of multilevel models. Observations from 23 countries were included in the analysis: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Lithuania, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Although data were available for a handful of other countries, these were not included either due to small samples sizes or by virtue of the fact that they could not be meaningfully classified into the institutional typology used in the analysis. The analysis was restricted to formally employed working-age adults (18–64 years). The final sample consisted of 50,848 observations. Table 1 describes the key characteristics of the sample.

5.2. Individual-level variables

The main individual-level independent variable was type of employment contract. It was operationalized as a dummy variable using a single question asking respondents if their contract is permanent or temporary in duration. The main outcome variables were self-reported health and limiting longstanding illness. Self-reported health was measured using a single five-category question asking respondents to rate their overall health. The variable was dichotomized to “good” (very good or good) and “poor” (fair, bad, or very bad). Self-reported limiting longstanding illness was measured using a single three-category question that asked respondents if they were hampered in their daily activities by any longstanding illness, disability, infirmity, or mental health problem. The variable was dichotomized to “yes” (yes a lot or yes to some extent) and “no”.

Five individual-level control variables were included to control for age, sex, education, marital status, and working hours. Age was operationalized as a continuous variable. We tested for non-linear relationships with age and determined the linear term to be an adequate fit. Sex was operationalized as a dummy variable. Three categories of educational attainment were created: less than secondary, secondary, and post-secondary. Four categories of marital status were identified: married or civil union, separated or

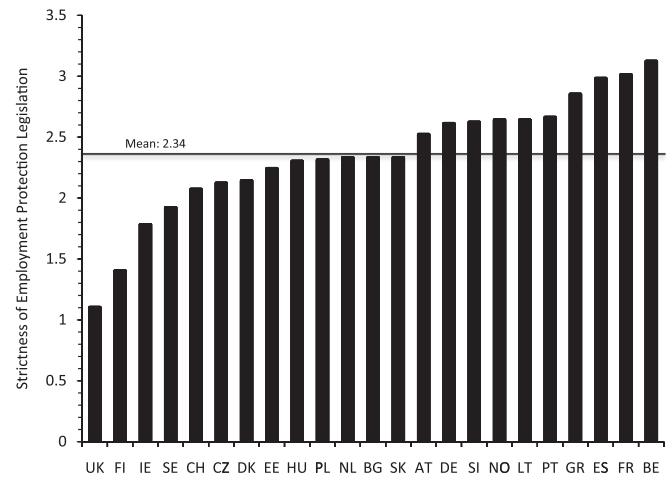


Fig. 1. Summary Indicator of Employment Protection Legislation Across 23 European Countries (2008–2012). Sources: OECD Employment Protection Database; Tonin (2009)

divorced, widowed, or single. Working hours was operationalized using an item that asked respondents to list the total number of contracted hours in their main job excluding paid or unpaid overtime.

5.3. Contextual-level variables

The main contextual-level independent variable was a two-dimensional typology capturing institutional interactions between labour market regulation and social security at the country level. Labour market regulation was measured using the employment protection legislation index included in the Organization for Economic Cooperation and Development *Employment Protection Database* (OECD, 2016a). Drawing on an established methodology (OECD, 2013), a summary indicator on the strictness of employment protection was constructed by averaging combined scores for permanent employment, temporary employment, and dismissals over the period of the study (2008–2012). Values for the summary indicator are depicted in Fig. 1. For the purpose of our typology, we distinguish between countries that fall above and below the mean employment protection score of 2.35. We describe these countries as having flexible or strict labour market regulations, respectively.

Social security was measured using a combination of two indicators included in the OECD *Benefits and Wages Database* (OECD, 2016b): social expenditure on active labour market policies and national unemployment insurance replacement rates for the long-term unemployed. The expenditure variable was adjusted to account for cross-national differences in GDP and levels of unemployment. Following Picot (2012), we focus on replacement rates for the long-term unemployed, because temporary workers do not, in most cases, qualify for a country’s main unemployment benefit. Values for both indicators of social security are depicted in Fig. 2. For the purpose of our typology, we distinguish between countries that exhibit high levels of effort on both dimensions of social security and those that exhibit low levels of effort on one or both of these dimensions.

On the basis of our two-dimensional analysis, we identify four clusters of countries, each corresponding to a distinct institutional configuration of labour market regulation and social security (Table 2). Notably, similar country clusters have been independently produced by other researchers (Chung, 2012; European Commission, 2006; Maselli, 2010; Muffels & Luijkx, 2005; Philips & Eamets, 2007). They have therefore proven relatively robust to different theoretical and methodological assumptions



Fig. 2. Social Security Effort Across 23 European Countries (2008–2012). Source: OECD Benefits and Wages Database.

Table 2
Institutional Typology of Labour Market Regulation and Social Security.

		Labour market regulation	
		Strict	Flexible
Social security effort	Insecure	Greece; Lithuania; Portugal; Slovenia; Spain	Bulgaria; Czech Republic; Estonia; Hungary; Ireland; Poland; Slovakia; United Kingdom
	Secure	Austria; Belgium; France; Germany; Norway	Denmark; Finland; Netherlands; Sweden; Switzerland

(Origo & Pagani, 2009).

The first cluster (Greece, Lithuania, Portugal, Slovenia, and Spain) includes countries that combine strict labour market regulations with low levels of social security. In these countries, the use of flexible forms of employment is strictly regulated. However, welfare state policies in these countries are largely underdeveloped and do little to protect the working-age population from adverse socio-economic experiences, including unemployment and poverty. The second cluster (Austria, Belgium, France, Germany, and Norway) includes countries that combine loose labour market regulations with high levels of social security. As in the previous cluster, the use of flexible employment contracts is strictly regulated. In the second group of countries, however, welfare state policies are considerably more generous and comprehensive. The third cluster (Bulgaria, Czech Republic, Estonia, Hungary, Ireland, Poland, Slovakia, and the United Kingdom) includes countries that demonstrate high levels of labour market flexibility and low levels of social security. In contrast to the previous two clusters, the countries in this group display highly deregulated labour market arrangements that promote the use of flexible employment contracts. Social security systems in these countries are residual in nature and offer only minimal levels of protection. The final cluster (Denmark, Finland, Netherlands, Sweden, and Switzerland) includes countries that combine highly deregulated labour markets with generous and comprehensive welfare state policies. By combining flexibility with security, these are the countries that most closely resemble the ideal-type of flexicurity.

Average annual per capita gross domestic product from 2008 to 2012 was included as a contextual-level control variable to account for the impact of economic growth on the association between employment conditions and health.

5.4. Statistical analyses

We conducted two separate analyses. First, relative inequalities in poor self-reported health and longstanding limiting illness between temporary and permanent workers were calculated through Poisson regression models with robust standard errors stratified by country cluster. Next, we estimated the cross-level interaction between individual employment conditions and our constructed typology through a series of four multilevel Poisson regression models. Model 1 estimated a one-way analysis of variance to examine whether there are overall differences in health across countries. In Model 2, we adjusted for the individual-level covariates and included a random slope estimate for employment status to test whether significant cross-national variation is observed in the association between temporary employment and health. The four-category typology was incorporated into Model 3, where cross-level interaction terms were used to estimate the potential role of different institutional configurations of flexibility and security in explaining some part of the observed cross-national variation. Finally, because the hypothesis of the flexicurity approach implies that the most significant difference should be observed between countries whose institutional configurations most approximate the flexicurity model and the rest of the sample, Model 4 estimated the cross-level interaction between temporary employment and a two-category typology (*i.e.* Flexible/Secure cluster vs. all remaining countries). The multilevel analyses were conducted for the two health outcomes independently.

In addition to our main analyses, we conducted sensitivity analyses to assess the robustness of our results. First, to test the robustness of our calibration of employment protection scores, we conducted supplementary analyses with alternative cutoff points, focusing on borderline countries (Tables S1–S4). Second, given the loss of information resulting from the use of empirical data to cluster countries into a typology, we ran additional multilevel models in which the contextual-level features (*i.e.* employment protection scores, expenditures on active labour market policies, and national unemployment insurance replacement rates for the long-term unemployed) were included as separate, continuous variables (Tables S5–S6). Finally, due to the problems associated with running multilevel models using a small sample of countries (Bryan & Jenkins, 2016), we used a two-step hierarchical estimation method recommended by Achen (2005) as an alternative means of assessing the impact of contextual-level flexicurity policies on the individual-level association between temporary employment and health (Table S7–S8). Since they did not diverge from our main findings, further details and results from these supplementary analyses are reported in the accompanying Web Appendix.

All pooled analyses include year dummy variables to account for the impact of time on the association between employment conditions and health. A design weight was used to correct for sampling biases resulting from the fact that individuals were not given the same probability of selection. A population weight was also used to correct for biases resulting from differences in country-specific sample sizes. All analyses were conducted using SAS Enterprise Guide 7.11.

6. Results

Cluster-specific associations between temporary employment and both health outcomes are listed in Table 3. The results listed in Table 3 indicate that temporary employment is associated with a greater prevalence of poor self-reported health and limiting longstanding illness in all four country clusters. Given the large overlap between the confidence intervals, these results do not

Table 3
Adjusted prevalence of poor self-rated health among temporary workers as compared to permanent workers, by level of educational attainment (ESS 2008–2012).

	Poor self-rated health			Limiting longstanding illness		
	Permanent (%)	Temporary (%)	PR (95% CI)	Permanent (%)	Temporary (%)	PR (95% CI)
Flexible/Secure	15.9	16.5	1.30 (1.15–1.49)	18.0	19.1	1.25 (1.11–1.41)
Flexible/Insecure	25.0	25.0	1.09 (1.01–1.17)	12.0	14.1	1.27 (1.15–1.41)
Strict/Secure	22.1	23.0	1.27 (1.15–1.40)	17.2	16.9	1.22 (1.08–1.37)
Strict/Insecure	25.3	23.4	1.17 (1.05–1.30)	10.9	8.8	1.10 (0.91–1.33)

Note: Prevalence ratios are adjusted for age, sex, education, marital status, and working hours.

Table 4
Multilevel Analysis of Poor Self-Rated Health Across 22 European Countries (ESS 2008–2012).

	Model 1 PR (95% CI)	Model 2 PR (95% CI)	Model 3 PR (95% CI)	Model 4 PR (95% CI)
Fixed Effects				
Type of contract				
Permanent (ref.)				
Temporary		1.24*** (1.14–1.35)	1.32** (1.10–1.58)	1.32** (1.10–1.59)
Typology, four categories				
Flexible/Secure (ref.)				
Flexible/Insecure			1.51 (0.98–2.32)	
Strict/Secure			1.31 (0.81–2.12)	
Strict/Insecure			1.45 (0.89–2.34)	
Typology, two categories				
Flexible/Secure (ref.)				
Not Flexible/Secure				1.43 (0.97–2.11)
Interactions				
Temporary* Flexible/Secure (ref.)				
Temporary* Flexible/Insecure			0.89 (0.72–1.11)	
Temporary* Strict/Secure			1.01 (0.80–1.29)	
Temporary* Strict/Insecure			0.91 (0.71–1.16)	
Temporary* Not Flexible/Secure				0.92 (0.74–1.13)
Random effects				
Country-Level Intercept	0.42*** (0.06)	0.42*** (0.06)	0.38*** (0.06)	0.39*** (0.06)
Temporary (Random Slope)		0.14*** (0.05)	0.12** (0.05)	0.13** (0.05)

Note: All models are adjusted for year. Models 2–4 are adjusted for age, sex, education, marital status, working hours, and GDP.

* $p < 0.05$.

Table 5
Multilevel Analysis of Limiting Longstanding Illness Across 22 European Countries (ESS 2008–2012).

	Model 1 PR (95% CI)	Model 2 PR (95% CI)	Model 3 PR (95% CI)	Model 4 PR (95% CI)
Fixed effects				
Type of contract				
Permanent (ref.)				
Temporary		1.22*** (1.13–1.31)	1.28*** (1.12–1.46)	1.28*** (1.12–1.46)
Typology, four categories				
Flexible/Secure (ref.)				
Flexible/Insecure			0.67* (0.46–0.97)	
Strict/Secure			0.97 (0.65–1.46)	
Strict/Insecure			0.58** (0.38–0.87)	
Typology, two categories				
Flexible/Secure (ref.)				
Not Flexible/Secure				0.71 (0.49–1.04)
Interactions				
Temporary* Flexible/Secure (ref.)				
Temporary* Flexible/Insecure			1.00 (0.84–1.19)	
Temporary* Strict/Secure			0.93 (0.77–1.12)	
Temporary* Strict/Insecure			0.82 (0.65–1.04)	
Temporary* Not Flexible/Secure				0.94 (0.81–1.10)
Random effects				
Country-Level Intercept	0.40*** (0.06)	0.40*** (0.07)	0.32*** (0.05)	0.37*** (0.06)
Temporary (Random Slope)		0.05* (0.02)	0.04* (0.02)	0.04* (0.02)

Note: All models are adjusted for year. Models 2–4 are adjusted for age, sex, education, marital status, working hours, and GDP.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

suggest that there are significant differences in the magnitude of the associations across the country clusters. The results depicted in Table 3 also suggest that the overall prevalence of poor self-rated health is lower in countries approximating the flexicurity ideal-type. This finding is in line with previous research indicating that Nordic countries, which comprise the majority of the cases situated in this cluster, exhibit better overall population health outcomes due to the presence of generous and comprehensive welfare state policies (Eikemo, Bambra & Judge, 2008).

The results of the multilevel analyses are presented in Table 4 for self-reported health and Table 5 for limiting longstanding illness. The significance of the random country-level intercept estimates in the null models (Model 1) suggests that there is statistically significant variation in self-reported health and limiting longstanding illness across countries. The random slope models (Model 2) indicate that temporary employment is significantly associated with an increased prevalence of both poor self-reported health (PR 1.24 [1.14–1.35]) and limiting longstanding illness (PR 1.22 [1.13–1.31]). In addition, the significance of the random slope estimates reveal that the associations vary significantly across countries. In the subsequent models (Model 3 and Model 4), we examine whether this cross-national variation in the association between temporary employment and health can be explained in terms of the institutional typology constructed in the previous section. To test the hypothesis that the magnitude of employment-related health inequalities varies across country clusters, we modeled interaction terms between temporary employment and each of the four clusters (Model 3). Taking the cluster closest to the ideal-type of flexicurity (*i.e.* the Flexible/Secure cluster) as the reference group, the interaction terms were not significant for self-reported health and limiting long-standing illness. In the final model (Model 4), we estimated interaction terms between temporary employment and a two-category version of our typology that distinguishes between the Flexible/Secure cluster and the remaining three clusters to observe whether or not significant differences are observed across this simpler institutional cleavage. The interaction term was similarly not significant for both self-reported health (PR 0.92 [0.74–1.13]) and limiting long-standing illness (PR 0.94 [0.81–1.10]). Thus, while we have observed cross-national variation in the association between temporary employment and our two health outcomes, our data do not indicate that institutional configurations of labour market regulation and social security captured in our constructed typology provide a significant explanation for that country-level variance.

7. Discussion

Our study set out to test one of the principal theoretical claims of the flexicurity approach: namely, that the adverse health-related consequences associated with temporary employment can be attenuated and even overcome through the provision of adequate and appropriate measures of social security (*c.f.* Kim et al., 2012). Our results do not provide support for this theoretical claim. In contrast to arguments advanced by its advocates, our analyses suggest that the flexicurity approach is not associated with narrower employment-related health inequalities between temporary workers and their permanently-employed counterparts. While several limitations (discussed below) preclude the possibility of formulating decisive conclusions, our results fail to confirm the theoretical claim that flexicurity policies moderate the association between temporary employment and health.

To our knowledge, this is the first study to empirically test the claim that flexicurity policies have the capacity to attenuate the adverse health consequences of temporary employment across a large sample of advanced capitalist countries. Prior studies have

challenged the notion that flexicurity can serve as a panacea for contemporary labour market woes (Afzal et al., 2013; Berglund et al., 2014; Burchell, 2009; MacAllister et al., 2016). Our study contributes novel empirical evidence to this broader literature on the troublesome relationship between labour market flexibility and the welfare of workers (Kalleberg, 2009).

There are at least two explanations for our findings. First, it is theoretically plausible that there is a threshold of social protection below which the moderating effects of flexicurity policies cannot be meaningfully observed (Afzal et al., 2013). In other words, our results may reflect the fact that few, if any, of the countries included in our analyses have social protection policies that are generous and comprehensive enough to act as effective buffers against the experience of temporary employment.

It is worth noting that European welfare states have experienced significant retrenchment and recommodification in recent decades (Bambra et al., 2010). The institutions responsible for providing protection against socio-economic risks associated with the operation of markets under capitalism have become less generous and less comprehensive during the same period of time that dramatic changes in employment relations have intensified workers' exposures to such risks. In fact, rather than flexicurity, the trend in most European countries has been towards greater insecurity (Burroni & Keune, 2011; Heyes, 2013). Moreover, the 2008 economic crisis and its associated aftershocks have generated significant imperatives for further retrenchment and reform (Karaniolos et al., 2013). The intersection of work and welfare—and the flexibility-security nexus in particular—is a principal terrain upon which contemporary austerity reforms are unfolding (Heyes, 2013). This disjuncture between the growing need for and declining supply of social protection has severely undermined conditions for the successful implementation of flexicurity policies (Afzal et al., 2013). These empirical developments may explain why our analyses have failed to find evidence in favour of the theoretical claims of the flexicurity approach.

A second explanation for our findings—one that is not mutually exclusive with the first—may be that the relationship between temporary employment, employment precariousness, and health is fundamental in its nature. By fundamental, we mean that the relationship influences multiple disease outcomes through multiple causal pathways involving a complex array of resources that are implicated in the social production of health and illness (Link & Phelan, 1995). From this perspective, we should expect the association between temporary employment and health to persist, even when we address one or another of the pathways involved in that association.

As we have already noted, temporary employment is characterized by multiple dimensions of precariousness (Benavides et al., 2006; Kim et al., 2012). While flexicurity policies aim to overcome a key dimension of precariousness associated with the experience of temporary employment (*i.e.* inadequate access to training and unemployment benefits), they do not account for many of the putative mechanisms underlying its association with health (Muntaner et al., 2010b). This may explain why flexicurity policies fail to exhibit a meaningful capacity to attenuate employment-related health inequalities (Burchell, 2009). This may also explain why employment-related health inequalities are pronounced even in countries with strict labour market regulations. In contrast to those searching for an institutional basis for non-precarious forms of temporary employment, tackling the fundamental causes of these inequalities may require a sharp reversal of recent trends towards greater labour market flexibility and, by extension, towards greater employment precariousness.

8. Limitations

There are several limitations to our analysis. First, despite the comparative nature of the ESS, it is plausible that the definition of temporary employment and the criteria according to which individuals rate their own health may differ across countries (Jylhä, 2009; Virtanen et al., 2005). Second, the ESS does not provide the means of distinguishing between individuals who engage in voluntary versus involuntary temporary employment. Nevertheless, contract preferences may have a significant bearing on the health-related consequences of temporary employment (Silla, Gracia & Peiró, 2007). Notably, research suggests that temporary employment is voluntary for only a minority of workers and that the proportion for whom temporary employment is involuntary has increased over time due to declining labour market conditions (De Cuyper, De Jong & De Witte, 2008). Third, our findings may reflect our metric of flexicurity (Chung, 2012). Future research should explore alternative indicators of flexicurity to examine whether they give rise to a different set of conclusions. Fourth, our study has focused on employment-related inequalities in self-reported health and limiting longstanding illness between temporary and permanent workers. Further analyses involving different health outcomes and different labour market groups (e.g. part-time workers or the unemployed) may generate different results. Fifth, research suggests that the health consequences of temporary employment vary as a function of an individual's gender and level of education (Hammarström, Virtanen, & Janlert, 2011; Kim et al., 2008). Due to sample size issues, we were not able to address these interactions. However, given that temporary workers are not a homogeneous group, there is a need for future research to consider whether and to what extent factors such as gender and education are related to the moderating effects of flexicurity policies. Finally, our results are prone to reverse causation and selection effects. More specifically, it is plausible that individuals who experience poor self-rated health or a limiting longstanding illness might select into temporary employment (e.g. because of the demands associated with permanent employment) or select out of temporary employment and into labour market inactivity (e.g. because of the demands associated with repeated job search) (Vives, Amable & Ferrer, 2013). Due to the cross-sectional nature of our data, we are incapable of accounting for the possibility of such biases. These limitations make it difficult to draw decisive conclusions about our results.

9. Conclusion

Over the course of the past two decades, a diverse range of social and political actors have promoted the flexicurity approach on the assumption that its institutional blueprint offers governments a seemingly effective means of bridging the divide between capital's growing demand for labour market flexibility and labour's persisting demand for security (Auer, 2010; Wilthagen & Tros, 2004; Muffels & Wilthagen, 2013). Our attempt to test the soundness of this argument has failed to generate evidence in support of its principal claim. More specifically, our analyses do not indicate that flexicurity policies are capable of attenuating the adverse health-related consequences associated with temporary employment. Despite its centrality to contemporary labour market reform agendas, there remains a relative lack of evidence to support the claim that flexicurity policies allow governments to pursue labour market flexibilization as a new basis for growth and accumulation without simultaneously compromising the health and well-being of workers.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.ssmph.2016.09.005>.

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