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Fixed-term Employment and Job Insecurity (JI) as Risk factors for Mental Health. A Review of International Study Results

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Abstract. Within the scope of the research project „Mental health in the working world - determining the current state of scientific evidence“ by the Federal Institute for Occupational Safety and Health (BAuA), we systematically reviewed studies on fixed-term employment, job insecurity (JI) and its effects on various mental health outcomes. The studies indicate that adverse health consequences of fixed-term employment are moderated by employees’ attitudes as regards the form of employment (e. g. voluntariness) and general life circumstances such as private security needs. Health impact of fixed term employment is furthermore mediated by organizational working conditions – job insecurity in particular. Accordingly, the analysis reveals strong associations between job insecurity and psychological morbidity. The results suggest that an entanglement of fixed-term employment and JI significantly determines the health status of employees. In this paper, we report the outcomes of two scoping reviews, and summarize the findings of the research regarding the associations of fixed-term employment, JI and mental health. Thereby, we discuss the role of job insecurity and further aspects such as stressful working conditions and voluntariness for the health of fixed-term employees.

Keywords: *Non-standard Employment, Job Insecurity, Mental Health, Labour Flexibility, Review*

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1. Introduction

Non-standard employment is a growing global phenomenon that affects more than 30 % of the worldwide workforce.¹ The term “non-standard employment” might comprise different forms of employment among countries but it is normally used to cover those work arrangements that fall outside the realm of the standard employment relationship (full-time, open-ended and entitlement to social protection) and associated with numerous problems including low wages, job insecurity (JI) and comparably poorer working conditions. Examples of non-standard employment include fixed-term and casual contracts, temporary agency workers or self-employees.^{2,3,4} Fixed term employment is the dominant form of non-standard employment in most European countries⁵ and account for 14 % of working population in the EU-28 in 2014.⁶ This employment form can be defined as paid employment with limited contract duration. The objective of this contribution is to report the health impact of fixed-term employment and potential mediators and moderators to this association based on two extensive literature reviews. The shift towards non-standard forms of employment including fixed-term employment is mainly driven by technological developments and the increasing intensity of competition in global markets. Employers are using non-standard employment forms more and more frequently to cover irregular and temporary changes in labour demands and to reduce labour costs.^{7,8,9} In addition to the economic changes political and regulatory

¹ OECD, *Non-standard work, job polarisation and inequality*, in *In It Together: Why Less Inequality Benefits All*. OECD Publishing, Paris, 2015, 135-208

² ILO, *World Employment Social Outlook, The changing nature of jobs*, ILO Research Department, Geneva, 2015

³ Y. Asao, G. Slater, H. Seifer, A. Valenzuela, F. Michon, A. Keizer, *Non-regular employment – issues and challenges common to the major developed countries*, JILPT Report n. 10, 2011

⁴ Eurofound, *Atypical Work*, 2015, <http://www.eurofound.europa.eu/observatories/eurwork/industrial-relations-dictionary/atypical-work> (accessed August 15, 2016)

⁵ OECD, *Job, Wages and Inequality*, OECD-Publishing, Paris, 2014

⁶ Eurostat, *Employment statistics*, 2015, http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics, (accessed August 16, 2016)

⁷ C. Hohendanner, L. Bellmann, *Atypische Beschäftigung und betrieblicher Flexibilisierungsbedarf* * *Ergebnisse des LAB-Betriebspanels*, in B. Keller, H. Seifert, (ed.), *Atypische Beschäftigung. Flexibilisierung und soziale Risiken*, Edition Sigma, Berlin, 2007

⁸ M. Dietz, U. Walwei, *Die Zunahme atypischer Beschäftigung-Ursachen und Folgen, Orientierungen zur Wirtschafts- und Gesellschaftspolitik*, vol. 109, n. 3, 2006, 17-24

developments promotes the distribution of the different forms of non-standard employment. Reacting to employment crisis in 1980 several European countries introduced labour flexibility as the solution to reduce unemployment rates and initiated policies of deregulation of labour markets. Finally, changes in workers' demands for flexibility are important in this context, because the standard employment does not cover alone today's heterogeneous preferences as regards e.g. work-life-balance. A non-standard form can also be a voluntary choice for certain workers. These might prefer the flexibility associated with employment relationships characterized by softer commitments¹⁰ or prefer to move from one temporary job to another to build a broad set of skills and to increase their employability.¹¹

As a result of the economic, political and social transformations over the last years – particularly after the financial crisis – a new flexible labour market has emerged which follows a core-periphery structure. Based on segmentation theories the labour market is divided into core (standard employment) and peripheral workers (non-standard-employment) and support the idea of insider and outsider groups.^{12,13} Core workers are meant to be very important for the organization as they possess important job-skills, knowledge, and experience and thus are difficult to replace. Employers offer them high-quality employment including learning opportunities, job security, and proper salaries to tie these persons.¹⁴ Peripheral workers surround the core workers and form a “buffer workforce”.¹⁵ This group of workers is less important for the organization, easily to replace and employers are unlikely to invest in this group. Additionally peripheral workers are often affected by JI and further adverse job characteristics (e.g. low control, low social support, more

⁹ U. Walwei, *Atypische Beschäftigungsformen: Kongruenz und Divergenz der Interessen*, in B. Keller, H. Seifert, (ed.), *Atypische Beschäftigung: verbieten oder gestalten*, Bund Verlag, Köln, 1995, 9-24

¹⁰ OECD, *op cit.*, p. 2

¹¹ S. Barley, G. Kunda, *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy*, Princeton University Press, Princeton and Oxford, 2004

¹² A. L. Kalleberg, *Flexible firms and labor market segmentation effects of workplace restructuring on jobs and workers*, *Work and occupations*, vol. 30, n. 2, 2003, 154-175

¹³ M. Reich, D. M. Gordon, R. C. Edwards, *A theory of labor market segmentation*, *The American Economic Review*, vol. 63, n. 2, 1973, 359-365

¹⁴ K. Hudson, *The new labor market segmentation: Labor market dualism in the new economy*, *Social Science Research*, vol. 36, n. 1, 2007, 286-312

¹⁵ J. E. Ferrie, H. Westerlund, M. Virtanen, J. Vahtera, M. Kivimäki, *Flexible labor markets and employee health*, *SJWEH Supplements*, n. 6, 2008, 98-110

repetitive tasks, and/or monotonous work).^{16,17} Consequently, given these different aspects of uncertainty and adverse circumstances peripheral workers are often in a precarious work and life situation.

Fixed-term employees as a part of the peripheral work force are also discussed as a precarious form of employment.^{18,19,20} Although some studies suggest that fixed-term contracts can be a helpful strategy to integrate unemployed persons into the labour market and build a “bridge” into stable employment at least for some employees,^{21,22,23} several studies point out that fixed-term employees are at increasing risk of poor work conditions and social disadvantages.^{24,25,26} Among others Ruiz et al.²⁷, Berton et al.²⁸ and Toharia and Cebrián²⁹ illustrate that accepting a fixed-

¹⁶ J. Benach, A. Vives, M. Amable, C. Vanroelen, G. Tarafa, C. Muntaner, *Precarious employment: understanding an emerging social determinant of health*, *Public Health*, vol. 35, n. 1, 2014, 229

¹⁷ M. Schuring, A. van Oosten, A. Burdorf, *Flexibility of the labour market and health inequalities-a systematic review*, University Medical Center Rotterdam, 2013

¹⁸ N. D. Cuyper, H. D. Witte, *Temporary Workers/Temporary Agency Workers*, Wiley Encyclopedia of Management, vol. 5, 2014, 1-3

¹⁹ N. De Cuyper, J. de Jong, H. De Witte, K. Isaksson, T. Rigotti, R. Schalk, *Literature review of theory and research on the psychological impact of temporary employment: Towards a conceptual model*, *International Journal of Management Reviews*, vol. 10, n. 1, 2008, 25-51

²⁰ J. Benach, F. G. Benavides, S. Platt, A. Diez-Roux, C. Muntaner, *The health-damaging potential of new types of flexible employment: a challenge for public health researchers*, *Am J Public Health*, vol. 90, n. 8, 2000, 1316-7

²¹ F. Berton, F. Devicienti, L. Pacelli, *Are temporary jobs a port of entry into permanent employment? Evidence from matched employer-employee*, *International Journal of Manpower*, vol. 32, n. 8, 2011, 879-899

²² M. Gerfin, M. Lechner, H. Steiger, *Does subsidised temporary employment get the unemployed back to work? An econometric analysis of two different schemes*, *Labour Economics*, vol. 12, n. 6, 2005, 807-835

²³ M. Kvasnicka, *Does temporary help work provide a stepping stone to regular employment?*, in D. H. Autor, (ed.), *Studies of Labor Market Intermediation*, University of Chicago Press, Chicago, 2009, 335-372

²⁴ N. De Cuyper, J. de Jong, H. De Witte, K. Isaksson, T. Rigotti, R. Schalk, *op cit.*, p.4

²⁵ V. Gash, F. McGinnity, *Fixed-term contracts – the new European inequality? Comparing men and women in West Germany and France*, *Socio-Economic Review*, vol. 5, n. 3, 2007, 467-496

²⁶ F. G. Benavides, J. Benach, A. V. Diez-Roux, C. Roman, *How do types of employment relate to health indicators? Findings from the second European survey on working conditions*, *J Epidemiol Community Health*, vol. 54, n. 7, 2000, 494-501

²⁷ J. I. C. Ruiz, F. F. Fernández, J. I. G. Pérez, *Reforma Laboral 2010: Una primera evaluación y propuestas de mejora*, *Revista de economía aplicada*, vol. 19, n. 57, 2011, 147-182

²⁸ F. Berton, F. Devicienti, L. Pacelli, *Temporary jobs: Port of entry, trap, or just unobserved heterogeneity?*, *LABORatorio Revelli Working Paper*, vol. 68, 2007

term employment does not raise the employees' chances to obtain a permanent position later on. For Europe the OECD³⁰ reports that less than 50 % of the workers who were on fixed-term contracts at in a given year are employed in a permanent position three years later. Additionally, studies indicate that repeated periods of fixed-term employment have a particularly negative effect on the probability of receiving an open-ended contract.^{31,32,33} Furthermore, fixed-term employees often receive lower pay and fewer benefits, are infrequently given the chance to participate in career planning and training and typically hold lower ranks in their workplaces.^{34,35,36,37} In addition, they experience more JI than permanent employees.^{38,39,40,41,42}

²⁹ L. Toharia, I. Cebrián, J. M. Arranz, *La temporalidad en el empleo: atrapamiento y trayectorias*, Ministerio de Trabajo y Asuntos Sociales Madrid, 2007

³⁰ OECD, *OECD Employment Outlook 2014*, OECD Publishing, Paris, 2014

³¹ S. Gagliarducci, *The dynamics of repeated temporary jobs*, *Labour Economics*, vol. 12, n. 4, 2005, 429-448

³² J. I. García-Pérez, F. Muñoz-Bullón, *Transitions into permanent employment in Spain: An empirical analysis for young workers*, *British Journal of Industrial Relations*, vol. 49, n. 1, 2011, 103-143

³³ B. Cockx, M. Picchio, *Are Short-lived Jobs Stepping Stones to Long-Lasting Jobs?*, *Oxford Bulletin of Economics and Statistics*, vol. 74, n. 5, 2012, 646-675

³⁴ OECD, *op cit.*, p. 2

³⁵ M. Virtanen, M. Kivimäki, M. Elovainio, J. Vahtera, J. E. Ferrie, *From insecure to secure employment: changes in work, health, health related behaviours, and sickness absence*, *Occupational and environmental medicine*, vol. 60, n. 12, 2003, 948-953

³⁶ A. L. Kalleberg, *Nonstandard employment relations: Part-time, temporary and contract work*, *Annual review of sociology*, n. 26, 2000, 341-365

³⁷ A. L. Kalleberg, B. F. Reskin, K. Hudson, *Bad jobs in America: Standard and nonstandard employment relations and job quality in the United States*, *American sociological review*, vol. 65, n. 2, 2000, 256-278

³⁸ N. De Cuyper, G. Notelaers, H. De Witte, *Job insecurity and employability in fixed-term contractors, agency workers, and permanent workers: associations with job satisfaction and affective organizational commitment*, *J Occup Health Psychol*, vol. 14, n. 2, 2009, 193-205

³⁹ I. Silla, F. J. Gracia, J. M. Peiró, *Job insecurity and health-related outcomes among different types of temporary workers*, *Economic and Industrial Democracy*, vol. 26, n. 1, 2005, 89-117

⁴⁰ N. De Cuyper, H. De Witte, *Job insecurity in temporary versus permanent workers: Associations with attitudes, well-being, and behaviour*, *Work & Stress*, vol. 21, n. 1, 2007, 65-84

⁴¹ H. De Witte, K. Näswall, *'Objective' vs 'subjective' job insecurity: Consequences of temporary work for job satisfaction and organizational commitment in four European countries*, *Economic and industrial democracy*, vol. 24, n. 2, 2003, 149-188

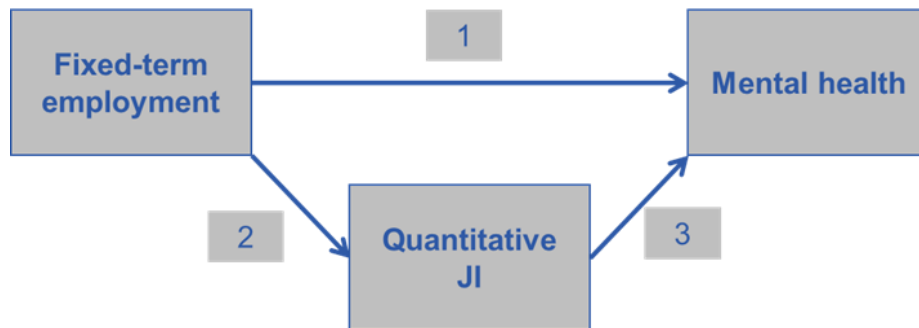
⁴² M. Kvasnicka, A. Werwatz, *Arbeitsbedingungen und Perspektiven von Zeitarbeitern*, *DIW Wochenbericht: Wirtschaft, Politik, Wissenschaft*, vol. 70, n. 46, 2003, 717-725.

As a result of the increasing use of fixed-term employment and its assumed associations with a bad quality of work and JI researchers have raised concerns about how fixed-term employment affects employees' health.

Our two scoping reviews update existing evidence on the relationship between fixed-term employment and mental health and JI and mental health. Thereby, we focus on the entanglement of fixed-term employment and JI for the health status of employees.

In our paper, we analyse the literature regarding fixed-term employment, JI and mental health in three ways (see figure 1). First, we describe the association of fixed-term employment and mental health. Second, we focus on the association of fixed-term employment and JI. Third, we analyse the correlation of JI and mental health. Before presenting the results we will give an overview about the important theories, focussing on work stress and psychological contract breach to explain the association between fixed-term contracts and amplify the methodological approach how we collected and reviewed the literature.

Figure 1. Research Approach



2. Theoretical Background

There are a number of theoretical assumptions that explain how fixed-term employment might negatively impact (mental) health.⁴³ Economic strain is one mechanism linking fixed-term employment and (mental)

⁴³ E. Pirani ,S. Salvini, Is temporary employment damaging to health? A longitudinal study on Italian workers, *Social Science & Medicine*, vol. 124, 2015, 121-131

health. The comparatively lower remunerations, reduced access to further education and possibilities of promotion in fixed-term employment increase the possibility of a higher risk of economic strain and in the long term of health impact.^{44,45,46}

Prominent work-related stress theories, like the Job Demand-Control Model (JDC),⁴⁷ help to explain how certain working conditions lead to impairment of fixed-term employees' health. For instance, from a JDC perspective, health impairments in fixed-term workers can be attributed to the higher prevalence of combined low latitude and high requirements in the job among fixed-term employees as opposed to permanent employees. These types of jobs are known predict higher levels of work strain and impairment of psychological well-being.^{48,49,50} Additionally, fixed-term contracts often involve further stressful and hazardous working conditions such as physically heavy works, exposure to harmful substances or unskilled tasks.⁵¹

Besides stress theoretical assumptions Social Exchange Theories (SET)^{52,53,54}, especially the Psychological Contract Theory,⁵⁵ help to explain

⁴⁴ Eurofound, *Flexible forms of work: 'very atypical' contractual arrangements*, 2010, <http://www.eurofound.europa.eu/observatories/eurwork/comparative-information/flexible-forms-of-work-very-atypical-contractual-arrangements>, (accessed August 16, 2016)

⁴⁵ J. Benach ,C. Muntaner, *Precarious employment and health: developing a research agenda*, *J Epidemiol Community Health*, vol. 61, n. 4, 2007, 276-277

⁴⁶ F. G. Benavides, J. Benach, A. V. Diez-Roux ,C. Roman, *op cit.*, p. 4

⁴⁷ R. A. Karasek Jr, *Job demands, job decision latitude, and mental strain: Implications for job redesign*, *Administrative science quarterly*, vol. 24, n. 2, 1979, 285-308

⁴⁸ J. A. Häusser, A. Mojzisch, M. Niesel ,S. Schulz-Hardt, *Ten years on: A review of recent research on the Job Demand–Control (-Support) model and psychological well-being*, *Work & Stress*, vol. 24, n. 1, 2010, 1-35

⁴⁹ A. H. De Lange, T. W. Taris, M. A. Kompier, I. L. Houtman ,P. M. Bongers, *"The very best of the millennium": longitudinal research and the demand-control(-support) model*, *Journal of occupational health psychology*, vol. 8, n. 4, 2003, 282-305

⁵⁰ M. Van der Doef ,S. Maes, *The job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research*, *Work & stress*, vol. 13, n. 2, 1999, 87-114

⁵¹ Eurofound, *Flexible forms of work and employment can lead to specific health risks*, 2003, <http://www.eurofound.europa.eu/observatories/eurwork/articles/flexible-forms-of-work-and-employment-can-lead-to-specific-health-risks>, (accessed August 15, 2016)

⁵² P. M. Blau, *Exchange and power in social life*, Transaction Publishers, New York, 1964

⁵³ G. C. Homans, *Social Behavior: Its Elementary Forms*, Harcourt, Brace & World, Oxford, 1961.

the association between fixed-term contracts and mental health. In general, SETs emphasize the norm of reciprocity and postulate that “[...] voluntary actions of individuals [...] are motivated by the returns they are expected to bring and typically do in fact bring from others”.⁵⁶

The term psychological contract is used „when an individual perceives that contributions he or she makes obligate the organization to reciprocity (or vice versa)“.⁵⁷ Based on this idea, fixed-term employees contribute for example loyalty, commitment, and performance. In return they expect job security, prospects for personal growth, educational opportunities and/or appropriate salaries. Psychological contract breach may occur if the organizations or employers do not respond as expected to the efforts of fixed-term workers. Violating the contract on the part of the employer may lead to stress experiences and long term adverse health effects among fixed-term employees.

Finally, unemployment and JI are two important mediating factors between fixed-term employment and health.⁵⁸ The negative health effects of unemployment are well documented.^{59,60} Data from the EU Labour Force Survey 2000 illustrate that unemployed persons reported the ending of a fixed-term contract as the reason for being out of work.⁶¹ Moreover, previous studies demonstrated that JI is associated with health impairments.^{62,63,64,65} Job insecurity is defined as „[...] overall concern

⁵⁴ J. W. Thibaut, H. H. Kelley, *The social psychology of groups*, John Wiley, Oxford, 1959

⁵⁵ D. M. Rousseau, *Psychological and implied contracts in organizations*, *Employee responsibilities and rights journal*, vol. 2, n. 2, 1989, 121-139

⁵⁶ P. M. Blau, p.91, *cit. op.*, p.7

⁵⁷ D. M. Rousseau, p.124, *cit. op.*, p.8

⁵⁸ A. Milner, A. Kavanagh, L. Krnjacki, R. Bentley, A. D. LaMontagne, *Area-level unemployment and perceived job insecurity: evidence from a longitudinal survey conducted in the Australian working-age population*, *Annals of occupational hygiene*, vol. 58, n. 2, 2013, 171-181

⁵⁹ K. I. Paul, K. Moser, *Unemployment impairs mental health: Meta-analyses*, *Journal of Vocational behavior*, vol. 74, n. 3, 2009, 264-282

⁶⁰ M. Bartley, *Unemployment and ill health: understanding the relationship*, *Journal of epidemiology and community health*, vol. 48, n. 4, 1994, 333-337

⁶¹ A. Franco, K. Winqvist, *At the margins of the labour market? Women and men in temporary jobs in Europe*, *Statistics in focus*, vol. 13, 2002, 1-8

⁶² G. H. L. Cheng, D. K. S. Chan, *Who suffers more from job insecurity? A meta-analytic review*, *Applied Psychology*, vol. 57, n. 2, 2008, 272-303

⁶³ M. Sverke, J. Hellgren, *The nature of job insecurity: Understanding employment uncertainty on the brink of a new millennium*, *Applied Psychology*, vol. 51, n. 1, 2002, 23-42

about the continued existence of the job in the future“.⁶⁶ Previous studies show that the association of fixed-term employment and health is partially mediated by JI.^{67,68,69,70} Fixed-term employees might have more (mental) health complaints than permanent employees as a result of more experience in previous unemployment and perceived JI.

3. Methodology

Both reviews are based on a broad systematic literature search on non-standard employment including fixed-term (IV) employment forms and JI (IV) and its effects on various mental health outcomes (DV). The keyword search terms to identify studies of fixed-term employment include general search terms like „flexible work arrangements“ and „contingent employment“ as well as specific search terms like „temporary work“, „fixed-term contracts“ and „fixed-term employment“. The search string to identify the relevant literature on JI is based on appropriate reviews and includes among others "job insecurity" OR "job security".^{71,72,73} In addition the reviews discuss the reason why employees perceive JI and how fixed-term employment and JI are related.

⁶⁴ M. Sverke, J. Hellgren ,K. Näswall, *No security: a meta-analysis and review of job insecurity and its consequences*, *Journal of occupational health psychology*, vol. 7, n. 3, 2002, 242

⁶⁵ H. De Witte, *Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues*, *European Journal of work and Organizational psychology*, vol. 8, n. 2, 1999, 155-177

⁶⁶ C. A. Heaney, B. A. Israel ,J. S. House, *Chronic job insecurity among automobile workers: Effects on job satisfaction and health*, *Social science & medicine*, vol. 38, n. 10, 1994, 1431-1437, p.1431

⁶⁷ L. Aletraris, *How satisfied are they and why? A study of job satisfaction, job rewards, gender and temporary agency workers in Australia*, *Human Relations*, vol. 63, n. 8, 2010, 1129-1155

⁶⁸ N. De Cuyper, J. de Jong, H. De Witte, K. Isaksson, T. Rigotti ,R. Schalk, *cit. op.*, p.4

⁶⁹ A.-K. Waenerlund, P. Virtanen, A. Hammarström, *Is temporary employment related to health status? Analysis of the Northern Swedish Cohort*, *Scandinavian journal of public health*, vol. 39, n. 5, 2011, 533-539

⁷⁰ A. F. Wagenaar, M. A. Kompier, I. L. Houtman, S. van den Bossche, P. Smulders ,T. W. Taris, *Can labour contract differences in health and work-related attitudes be explained by quality of working life and job insecurity?*, *International archives of occupational and environmental health*, vol. 85, n. 7, 2012, 763-773

⁷¹ G. H. L. Cheng ,D. K. S. Chan, *cit. op.*, p.8

⁷² A. C. Keim, R. S. Landis, C. A. Pierce ,D. R. Earnest, *Why do employees worry about their jobs? A meta-analytic review of predictors of job insecurity*, *Journal of Occupational Health Psychology*, vol. 19, n. 3, 2014, 269-290

⁷³ M. Sverke, J. Hellgren ,K. Näswall, *cit. op.*, p.9

The research was conducted within the scope of the project „Mental health in the working world - determining the current state of scientific evidence“ of the German Federal Institute for Occupational Safety and Health (BAuA). Scientific articles were identified from PSYINDEX, PsycINFO, PubMed, WISO and EconLit. The search was complemented by manually searching the bibliographies of articles, previous reviews and books. The search was limited to the period from 2000 until 2015 because for the period before 2000 comprehensive meta-analyses as regards the health effects of JI are available.^{74,75,76} We included studies published in English and German focussing on mental health. The following indicators for mental health have been found: mental health unspecified (captured as „mental health“), psychological/affective well-being, burnout, depression and psychological and behavioural disorders (IDC).

In this paper, we report the outcomes of our two scoping reviews^{77,78} and summarize the findings of the research regarding the associations of fixed-term employment, JI and mental health. For this reason no study was excluded because of methodological quality and we integrated both quantitative and qualitative studies and theoretical contributions. Thereby, we generated a broad overview of the scientific evidence that help answer the following research questions:

1. Are fixed-term contracts related to mental health impairments?
2. How is fixed-term employment related to JI?
3. Is JI related to mental health impairments?

The evaluation of the quantitative scientific findings is performed in three steps. Firstly, we present how many of the studies report a significant result (p -level < 0.05). Secondly, we specify how the measures of association of fixed-term employment and mental health and JI and mental health are directed (directionality). In order to assess the practical

⁷⁴ I.-H. Kim, C. Muntaner, F. V. Shahidi, A. Vives, C. Vanroelen, J. Benach, *Welfare states, flexible employment, and health: a critical review*, *Health policy*, vol. 104, n. 2, 2012, 99-127

⁷⁵ G. H. L. Cheng, D. K. S. Chan, *cit. op.*, p.8

⁷⁶ M. Sverke, J. Hellgren, K. Näswall, *cit. op.*, p.9

⁷⁷ Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA), Leitfaden für die Erarbeitung von Scoping Reviews, 2014

⁷⁸ R. Armstrong, B. J. Hall, J. Doyle, E. Waters, 'Scoping the scope' of a cochrane review, *Journal of Public Health*, vol. 33, n. 1, 2011, 147-150

relevance of the reported study results, we finally present the effect size for all unadjusted correlations. For all studies that indicate a bivariate correlation we calculated mean correlations \bar{r}_{ij} for fixed-term employment and JI i and mental health outcomes j weighted by sample size with the following formula

$$\bar{r}_{ij} = \frac{\sum_s^k w_s \cdot r_{ij}}{\sum_s^k w_s}, \quad w_s = n_s$$

s : particular study, k : total number of studies for each combination of IV-DV-combination, n_s : sample size of study s , w_s : sample balanced weight.⁷⁹

Besides bivariate correlations also odds ratios and regression coefficients were reported in the studies, these were, however, by majority adjusted for several covariates and hence not comparable or reasonably be summarized. Crude odds ratios and regression coefficients were transformed into bivariate correlations. Referring to Cohen⁸⁰ a correlation can interpreted as trivial ($\bar{r}_{ij} < ,1$), small ($,1 \leq \bar{r}_{ij} < ,3$), medium ($,3 \leq \bar{r}_{ij} < ,5$) and large ($\bar{r}_{ij} \geq ,5$). Further down, we reflect our results corresponding to these evidence levels.

After duplicate check the search for publications regarding non-standard employment and health yielded 3017 citations for the period from January 2000 to January 2015. Based on abstract and full-text screening we identified 42 studies on the association between fixed-term employment and mental health, including 39 cross-sectional studies and three longitudinal studies. Some of the publications include more than one outcome, thus 84 analyses for fixed-term employment and mental health are described and interpreted below.

Further, we identified 2341 studies analysing the predictors of JI and the association of JI and health. These studies included 136 correlations between JI and mental health. In the majority of samples, participants were recruited from unselected general working population covering

⁷⁹ W. Viechtbauer, *Bias and efficiency of meta-analytic variance estimators in the random-effects model*, *Journal of Educational and Behavioral Statistics*, vol. 30, n. 3, 2005, 261-293

⁸⁰ J. Cohen, *A power primer*, *Psychological bulletin*, vol. 112, n. 1, 1992, 155-159

mixed industries and occupations. Likewise, most studies report results for men and women together and not gender-stratified.

4. Results

Below, we present our results among the three research questions of this contribution. Firstly, we describe the association of fixed-term employment and mental health. Secondly, we focus on the association of fixed-term employment and JI. Thirdly, we analyse the correlation of JI and mental health.

4.1 Fixed-Term Employment and Mental Health

The first table summarizes the distribution of studies among the different health outcomes and the level of significance. The majority of the studies described psychological/affective well-being. The remaining studies were distributed equally across burnout, depression and psychological and behavioural disorders. Statistically significant associations between fixed-term employment and mental health were reported in 34 of 84 publications. With the exception of burnout in all categories of mental health non-significant associations were predominant.

Table 1. Number of Significant Associations of Fixed-term Employment and Mental Health

Mental health outcomes	Total	Significant associations (p < 0,05)	Non-significant associations
Mental health (total)	84	34 (40%)	50 (60%)
Psychological/affective well-being	52	22 (42%)	30 (58%)
Burnout	11	7 (63%)	4 (37%)
Depression	11	4 (37%)	7 (63%)
Psychological and behavioural disorders (IDC)	10	1 (10%)	9 (90%)

With regard of the consistency of the significant results, the studies revealed an ambivalent picture (Table 2). Within the significant results, we found only slightly more expected associations than unexpected. In 53 % of all studies fixed-term employees had a higher risk of mental health impairments. In specific, studies focused on burnout and psychological/affective wellbeing reported slightly more expected significant results (57% respectively 55%).

Table 2. Significant Associations of Fixed-term Employment and Mental Health

Mental health outcomes	Total	Expected significant associations	Unexpected significant associations
Mental health (total)	34	18 (53%)	16 (47%)
Psychological/affective well-being	22	12 (55%)	10 (45%)
Burnout	7	4 (57%)	3 (43%)
Depression	4	2 (50%)	2 (50%)
Psychological and behavioural disorders (IDC)	1	0	1 (100%)

Furthermore, the overview of the mean correlations in table 3 shows only one statistically meaningful effect size. The effect size presented a small negative correlation between fixed-term employment and psychological/affective well-being. This indicates that fixed-term employees had a better psychological/affective well-being than permanent employees. For all other dependent variables (i. e. burnout, depression and psychological and behavioural disorders) no statistically significant effects were found.

Table 3. Mean Correlations \bar{r}_{ij} Weighted by Sample Size, Fixed-term Employment and Mental Health

Mental health outcomes	\bar{r}_{ij}	Spread	Based on k correlations
Mental health (total)	-.06	-.58; .37	57
Psychological/affective well-being	-.10	-.19; .37	34
Burnout	.02	-.12; .20	5
Depression	.02	-.58; .16	11
Psychological and behavioural disorders (IDC)	-.02	-.13; .02	7

Deeper analyses of the studies included showed that further factors were important moderators and mediators for the health consequences of fixed-term employment. The majority of non-significant associations was adjusted for instance by unemployment rate, further work characteristics and job insecurity.

However, studies indicated that specific conditions such as job insecurity or hazardous working conditions, which are linked to fixed-term employment, were important for the health consequences and might thus mediate the association of fixed-term employment and health impact.^{81,82,83,84}

Furthermore, factors beyond of the employment contract like social determinants (e. g. unemployment rate and household context) and motivational aspects (e.g. volition and voluntariness) also played a moderating role.^{85,86}

⁸¹ Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G., & Muntaner, C., *cit. op.*, p.4

⁸² N. D. Cuyper, H. D. Witte, *cit op.* p.5

⁸³ C. Bernhard-Oettel, M. Sverke, H. De Witte, *Comparing three alternative types of employment with permanent full-time work: How do employment contract and perceived job conditions relate to health complaints?*, *Work & Stress*, vol. 19, n. 4, 2005, 301-318

⁸⁴ A. Wikman, A. Andersson, M. Bastin, *Nya relationer i arbetslivet* (New relations in working life), National Institute for Working Life, Stockholm, 1998

⁸⁵ M. Kauhanen, J. Nätti, *Involuntary temporary and part-time work, job quality and well-being at work*, *Social Indicators Research*, vol. 120, n. 3, 2015, 783-799

Studies regarding the association of temporary employment and mental health including the unemployment rate were ambivalent. On the one hand, Clark⁸⁷ showed that the well-being of temporary workers decreased less if they lived in a region with a high unemployment rate. Likewise, to be a temporary employee was less stigmatizing in contexts where unemployment was common⁸⁸, this can also reduce the health damaging consequences of temporary employment. On the other hand, high employment rates can decrease the well-being of temporary employments as a result of relative material deprivation. The disadvantages of temporary employment like job insecurity or income poverty can increase under the condition of high employment rates⁸⁹ and impair employees' health. In addition, Virtanen et al.⁹⁰ reported a higher morbidity rate of temporary workers in countries with a low employment rate, probably related to a health selection bias.⁹¹

Furthermore, the household circumstances were important for the consequences of fixed-term employment. On the one hand, if a certain form of atypical work is combined with another type of - typical or atypical - work, either by one and the same person (an employed professional with a small own-account consultancy practice), or between two partners in one household, the disadvantages of fixed-term contracts like income poverty can be compensated.⁹² On the other hand, the

⁸⁶ C. Bernhard-Oettel, N. D. Cuyper, E. Berntson, K. Isaksson, *Well-being and organizational attitudes in alternative employment: The role of contract and job preferences*, *International Journal of Stress Management*, vol. 15, n. 4, 2008, 345-363

⁸⁷ A. E. Clark, *Unemployment as a social norm: Psychological evidence from panel data*, *Journal of labor economics*, vol. 21, n. 2, 2003, 323-351

⁸⁸ M. Strandh, M. Novo, A. Hammarström, *Mental health among the unemployed and the unemployment rate in the municipality*, *The European Journal of Public Health*, vol. 21, n. 6, 2011, 799-805

⁸⁹ L. Minelli, C. Pignini, M. Chiavarini, F. Bartolucci, *Employment status and perceived health condition: longitudinal data from Italy*, *BMC public health*, vol. 14, n. 1, 2014, 1-12

⁹⁰ M. Virtanen, M. Kivimäki, M. Joensuu, P. Virtanen, M. Elovainio, J. Vahtera, *Temporary employment and health: a review*, *International journal of epidemiology*, vol. 34, n. 3, 2005, 610-622

⁹¹ L. Artazcoz, I. Cortès-French, V. Escribà-Agüir, *Gender, work and health: a step forward in women's occupational health*, in J. Gideon, (ed.), *Handbook on Gender and Health*, Edward Elger Publishing, Cheltenham/Northampton, 2016, 165-188

⁹² A. Debels, *Transitions out of Temporary Jobs: Consequences for Employment and Poverty across Europe*, in R. Muffels, (ed.), *Flexibility and employment security in Europe: labour markets in transition*, Edward Elger Publishing, Cheltenham, 2008, 51-78

combination of multiple atypical employment forms in one household can increase the possibility of precariousness and adverse mental health effects.

Besides social determinants also the volition and voluntariness doing a fixed-term employment are important moderators of fixed-term employment and (mental) health. Volition and voluntariness describes preference of workers for fixed-term employment.⁹³ De Cuyper and De Witte⁹⁴ specified reasons for accepting a fixed-term employment, that is free choice, forced choice, and instrumental choice with the prospect of gaining permanent employment or improving skills.

Data from the European Union Labour Force Survey show that by majority of countries, fixed-term contracts are not based on voluntary choices for most employees.⁹⁵ In the existing literature differences have been found in job satisfaction and health outcomes depending on contract preferences. The results indicated that job satisfaction and health negatively affected, if workers were involuntarily employed on the basis of a fixed-term contract, while the reverse was true for workers being voluntarily employed on the basis of a fixed-term contract.⁹⁶ Isaksson & Bellagh (2002)⁹⁷ found that under the condition of not preferring a fixed-term contract employment was related to psychological distress among female temporary workers. Bernhard-Oettel et al.⁹⁸ found that low preferences for temporary contracts was associated via higher job insecurity with lower job satisfaction, impaired health, and higher

⁹³ N. De Cuyper ,H. De Witte, Job insecurity and employability among temporary workers: A theoretical approach based on the psychological contract, in K. Näswall, J. Hellgren,M. Sverke, (ed.), *The individual in the changing working life.*, Cambridge University Press, New York, NY, US, 2008, 88-107

⁹⁴ N. De Cuyper ,H. De Witte, *cit. op.*, p.16

⁹⁵ OECD, *cit. op.* p.5

⁹⁶ M. Beckmann, A. Binz ,B. Schauenberg, *Fixed-term employment and job satisfaction: Evidence from individual-level data accounting for selectivity bias, WWZ-Discussionpaper*, vol. 07, n. 03, 2007, 1-30

⁹⁷ K. S. Isaksson ,K. Bellagh, *Health problems and quitting among female" temps"*, *European Journal of Work and Organizational Psychology*, vol. 11, n. 1, 2002, 27-45

⁹⁸ C. Bernhard-Oettel, T. Rigotti, M. Clinton ,J. de Jong, *Job insecurity and well-being in the temporary workforce: Testing volition and contract expectations as boundary conditions*, *European Journal of Work and Organizational Psychology*, vol. 22, n. 2, 2013, 203-217

irritation. Kauhanen and Nätti⁹⁹ reported that involuntary temporary workers experience a lower job quality with respect to training and career possibilities or job autonomy.

4.2 Fixed-term Employment and JI

One further core mediator of fixed-term employment and health is presumably perceived job insecurity. Studies on predictors of JI and studies on the correlation of fixed-term employment and health, considering job insecurity, suggested an entanglement of the two working condition factors "fixed-term employment" and "JI".

With regard to the triangulation of fixed-term employment – JI – (mental) health we identified evidence for the following associations:

1. fixed-term employment is a predictor of JI
2. fixed-term employment moderates the association of JI – (mental) health
3. JI mediated the association of fixed-term employment and (mental) health

First, according to the literature of JI, fixed-term employment (employment contract on the individual level) is one of the important predictors of JI. In the meta-analysis on predictors of JI Keim et al.¹⁰⁰ reported significant associations of contract type and JI ($r = .20$). Thus, fixed-term employees reported higher job insecurity in comparison to permanent employees. Additionally, the association of fixed-term employment and JI was moderated by the general unemployment rate: JI of fixed-term employment decreased under conditions of low unemployment rates.

Second, the analyses of several studies suggested that the interaction of JI and fixed-term employment added significantly to the explained variance

⁹⁹ M. Kauhanen J. Nätti, *cit. op.*, p.14

¹⁰⁰ A. C. Keim, R. S. Landis, C. A. Pierce ,D. R. Earnest, *cit. op.*, p.9

of the well-being.^{101,102} These suggests that the characteristics of the employment contract co-determine the direction and strength of the association between JI and (mental) health. The analyses of Virtanen et al.¹⁰³ showed that JI was accompanied with health impairments for both permanent employees and fixed-term employees. However the strongest effect was found by fixed-term employees with job insecurity.

Third, we found support for the mediation function of JI between fixed-term employment and (mental) health. In the literature, JI is one of the core arguments behinds the worse (mental) health situation of fixed-term employees in comparison to permanent employees.¹⁰⁴ Different studies revealed that temporary employees reported job insecurity more frequently than permanent workers.^{105,106,107} Among others Bernhard-Oettel et al.¹⁰⁸ underlined the importance of job insecurity for temporary workers as risk for impaired well-being. Waenerlund et al.¹⁰⁹ reported that JI partially mediated the association between temporary employment and health status with respect to self-rated health and psychological distress. Furthermore, Jahn¹¹⁰ found based on longitudinal data from Germany, that it was not the formal job security provided by the contractual agreement but rather the perceived job security that mattered for job satisfaction.

¹⁰¹ K. Kirves, N. De Cuyper, U. Kinnunen, J. Nätti, *Perceived job insecurity and perceived employability in relation to temporary and permanent workers' psychological symptoms: A two samples study*, *International archives of occupational and environmental health*, vol. 84, n. 8, 2011, 899-909

¹⁰² T. Rigotti, N. De Cuyper, H. De Witte, S. Korek, G. Mohr, *Employment Prospects of Temporary and Permanent Workers: Associations with Well-being and Work Related Attitudes*, *Journal Psychologie des Alltagshandelns/ Psychology in Everyday Activity*, vol. 2, n. 1, 2009, 22-35

¹⁰³ P. Virtanen, U. Janlert, A. Hammarström, *Exposure to temporary employment and job insecurity: a longitudinal study of the health effects*, *Occupational and environmental medicine*, vol. 68, n. 8, 2010, 570-574

¹⁰⁴ N. De Cuyper, S. Mauno, U. Kinnunen, A. Mäkikangas, *The role of job resources in the relation between perceived employability and turnover intention: A prospective two-sample study*, *Journal of vocational behavior*, vol. 78, n. 2, 2011, 253-263

¹⁰⁵ J. Benach, A. Vives, M. Amable, C. Vanroelen, G. Tarafa, C. Muntaner, *cit. op.*, p.4

¹⁰⁶ P. Virtanen, U. Janlert, A. Hammarström, *cit. op.*, p.18

¹⁰⁷ M. Virtanen, M. Kivimäki, M. Elovainio, J. Vahtera, J. E. Ferrie, *cit. op.* p.5

¹⁰⁸ C. Bernhard-Oettel, N. D. Cuyper, E. Berntson, K. Isaksson, *cit. op.* p.15

¹⁰⁹ A.-K. Waenerlund, P. Virtanen, A. Hammarström, *cit. op.*, p.9

¹¹⁰ E. Jahn, *Don't worry, be flexible. Job satisfaction among flexible workers*, *LASER Discussion Papers*, n. 71, 2013

4.3 JI and Mental Health

In line with various meta-analyses of JI impact^{111,112} we found that job insecurity is consistently associated with overall unfavourable mental health outcomes. As regards the mental health impact of JI 68 % of the analysed associations demonstrated significantly negative health impact of JI. Only 6,7 % of the associations suggested that JI was not related to ill health.

Table 4. Mean Correlations \bar{r}_{ij} Weighted by Sample Size, JI and Mental Health

Mental health outcomes	\bar{r}_{ij}	Spread	Based on k correlations
Mental health impairment (total)	.18	.002–.43	136
Mental health impairment (unspecified)	.21	.19–.28	9
Psychological/affective well-being impairment	.16	.01–.42	46
Burnout	.19	.05–.41	40
Psychological and behavioural disorders / including depression (IDC)	.20	.002–.43	41

We found for all mental health outcomes statistically meaningful effect sizes. These presented all a small positive correlation between JI and mental health impairments. The strongest average correlation was found for mental health (unspecified) with $\bar{r}_{ij} = .20$ (Table 4).

¹¹¹ G. H. L. Cheng, D. K. S. Chan, *cit. op.*, p.8

¹¹² M. Sverke, J. Hellgren, *cit. op.*, p.9

5. Discussion and Conclusion

This contribution refers to two scoping reviews including 84 associations between fixed-term employment and mental health and 136 correlations of JI and mental health. Our results showed that fixed-term employment was not consistently associated with mental health impairments as long as potential mediators and moderators to the association were neglected. 60 % of the included studies did not report a significant association of fixed-term employment and mental health. Moreover, half of the significant associations revealed a lower risk of mental health impact in fixed-term employment as opposed to permanent employment. In addition, one effect size indicated that fixed-term employees had a better psychological/affective well-being than permanent employees. Scholars come up with different explanations why fixed-term employees have a better health status compared to permanent employees and stress that negative health impact on fixed-term employment might be systematically underestimated: Firstly, fixed-term employees may not disclose health impairments or diseases to the organizations because they do not want to spoil the chance on a permanent position.¹¹³ In conclusion, health impairments include various risks to continued employment depending on employment situations. It can be assumed that fixed-term workers who are in a probationary situation obtain from being absent from work due to health problems. This is in line with findings that fixed-term employees had less sickness absence than permanent employees¹¹⁴ and that in times of increased JI absenteeism rates decrease whilst presenteeism increases.¹¹⁵ Another reason for inconsistent findings might be the so called healthy worker effect. Fixed-term employment is more common amongst younger people with shorter tenure. In case of a positive selection of young healthy individuals in fixed-term employment, less healthy workers remain in unemployment (healthy hire effect). Furthermore, we find an out-

¹¹³ N. De Cuyper, J. de Jong, H. De Witte, K. Isaksson, T. Rigotti, R. Schalk, *cit. op.*, p.4

¹¹⁴ L. Hünefeld, *Atypische Beschäftigung*, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Dortmund, 2016

¹¹⁵ S. Gerstenberg, B. Köper, *Einflussfaktoren auf und Auswirkungen von subjektiver (quantitativer) Arbeitsplatzunsicherheit / Job Insecurity (JI)*, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Dortmund, 2016.

selection of less healthy worker which drop back in the group of unemployed persons while healthier employees remain in fixed term employment (healthy worker survivor effect).^{116,117}

Despite the inconsistencies in the study findings the other half of the studies indicated a significant positive association of fixed-term employment and mental health impact. Deeper analyses showed that moderators like unemployment rate, volition and voluntariness and mediators like job insecurity for the health consequences of fixed-term employment are very important. For instance, involuntary fixed-term employees reported more often mental health impairments than voluntary fixed-term employees. Furthermore, fixed-term employment is strongly associated with JI and Keim et al.¹¹⁸ demonstrated the significant importance of the type of contract as predictor of JI. In addition JI is associated with unfavourable mental health outcomes and 68 % of the significant associations revealed a higher risk of mental health impact with increasing JI. In conclusion, the results suggest that an entanglement of fixed-term employment and JI significantly determines the (mental) health status of employees. Consequently, in future research the knowledge about the relationship between fixed-term employment and mental health of workers can be enhanced when the combined effects of employment contract and job insecurity are studied.

6. Limitations

The current study has some limitations. Firstly, the majority of the included studies have a cross-sectional design; and thus biases which can lead to the overestimation of effect sizes. Given the small amount of longitudinal studies our review allows only for statements about correlations rather than about causalities. Based on the majority of

¹¹⁶ L. M. Carpenter, *Some observations on the healthy worker effect*, *British Journal of Industrial Medicine*, vol. 44, n. 5, 1987, 289-291

¹¹⁷ A. J. Fox ,P. Collier, *Low mortality rates in industrial cohort studies due to selection for work and survival in the industry*, *British journal of preventive & social medicine*, vol. 30, n. 4, 1976, 225-230

¹¹⁸ A. C. Keim, R. S. Landis, C. A. Pierce ,D. R. Earnest, *cit. op.*, p.9

included studies we cannot conclude whether poor health is the consequence of or cause for fixed-term employment. Secondly, only the minority of studies reported reliability measures for the used variables. Often both JI and the dependent variable were captured by only one item. In general, the reliability of an instrument increases with the number of items.¹¹⁹ Thus, lower reliability and increased measurement errors in terms of health outcomes might be assumed. Thirdly, the included studies controlled for gender, age and social status. However, occupation, industrial sectors and tenure/contract duration were not considered as covariates, which is a shortcoming as unfavourable working conditions are unequally distributed among different occupations and industrial sectors. Therefore, it is unclear whether fixed-term employment is related to adverse mental health outcomes with different patterns depending on occupations and industrial sectors. Additionally, gender-based patterns in employees' health are uncovered and limit the interpretation of gender specific health inequalities in fixed-term employment.

Furthermore, existing studies reported that the contract duration is an important factor for the consequences of fixed-term employment.¹²⁰ Fixed-term employment includes contracts with different terms and conditions so that it can be assumed that fixed-term employment is more strongly associated with health impairments in case of short-term contracts as one indicator of instability.¹²¹

Consequently, we conclude that scholars should conduct more longitudinal studies to examine the causal effect of fixed-term employment and health. Moreover, future research should consider the context in which fixed-term employment is integrated. It can be expected that fixed-term employment is associated with different health effects depending on occupation and industry. Longitudinal research will also enhance the understanding of the mechanism through which fixed-term employment is associated with (mental) health.

¹¹⁹ R. Schnell, P. B. Hill, E. Esser, *Methoden der empirischen Sozialforschung*, Oldenbourg Verlag, München, 2011

¹²⁰ N. De Cuyper, H. De Witte, *The impact of job insecurity and contract type on attitudes, well-being and behavioural reports: A psychological contract perspective*, *Journal of Occupational and Organizational Psychology*, vol. 79, n. 3, 2006, 395-409

¹²¹ M. Virtanen, M. Kivimäki, M. Joensuu, P. Virtanen, M. Elovainio, J. Vahtera, *cit. op.*, p.15

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