

Research paper

Ethnicity and work-related stress in Eastern European care workers for the elderly: an application of a proposed multi-dimensional model.

Roberto Capasso

Department of Political Sciences, University of Naples "Federico II", Via Rodinò, 22, 80133, Naples, Italy.

Maria Clelia Zurlo

Department of Political Sciences, University of Naples "Federico II", Via Via Rodinò, 22, 80133, Naples, Italy.

Andrew P. Smith

Centre for Occupational and Health Psychology, School of Psychology, Cardiff University, 63 Park Place, Cardiff, CF10 3AS, United Kingdom.

ABSTRACT

The present study aims to test the application of a multi-dimensional model of stress that takes as a framework of reference the DRIVE (Demands, Resources, and Individual Effects) model and previous studies on occupational health and cultural aspects in a sample of Eastern European eldercare workers. This model integrated ethnicity and work-related stress dimensions in a transactional perspective combining individual differences, ethnicity aspects, work characteristics in the prediction of psychophysical health giving closer attention to specific associations between cultural dimensions such as cultural identity, acculturation strategies and health outcomes. Therefore the study hypothesized significant profiles of associations between individual differences, work characteristics, ethnicity dimensions, perceived job satisfaction/stress and health outcomes among these workers. A questionnaire measuring the following dimensions was submitted to 250 Eastern European eldercare workers in Southern Italy: coping strategies, personality behaviours, acculturation strategies, perceived work demands, resources/rewards, perceived job stress/satisfaction, psychological

disorders and general health. Around one third (38.6%) lived in Italy from more than 5 years, all were women (Age Mean=43.18; SD=4.25) and most of them were married (94.8 %), with a high level of education (94.4 %), worked full-time (93.2 %) and had fixed contracts (97.2 %).

Data were analysed using LR logistic regression to evaluate the effects of all the dimensions reported on the risk of suffering health problems. Results showed that work demands, type A and negative affectivity behavioural patterns significantly associated with high levels of anxious-depressive disorders, relational disorders and general health. Moreover positive coping strategies, specific acculturation strategies and perceived job satisfaction significantly associated with low levels of psychophysical disorders. Findings supported different aspects of the proposed stress model and will be helpful in defining psychological interventions to support this particular type of migrant workers.

Keywords: Ethnicity, Care workers, Work-related stress models, Psychophysical health

Introduction

In recent years, care services have become highly dependent upon migrant labour in European countries. Migrant care workers are often employed by families to care for an elderly dependent family member in the EU, particularly in Austria, France, Italy, Spain, UK and Sweden. Throughout Europe, due to ageing populations and the increasing participation of women in the labour force, women are the main providers of family care for the elderly – the need for elderly care services has increased (OECD, 2005) and in this context, migrant workers have started to fill emerging gaps in elderly care.

The conditions in Italy, with its longstanding negative growth rate and inadequate state policies to respond to a progressively older population, provide an important case study for understanding the complexities of eldercare. As of today approximately 25 per cent of the population of Italy is over 60 years old. This means that 14,7 million people, of whom an estimated 8,4 million are female and 6,3 million

are male, are likely to require care at same stage of their lives because of chronic illness or the effects of aging (WHO, 2011). Furthermore, changes in the Italian national health services have led to shorter hospital stays and early discharge, so that elderly people may be sent home from the hospital before they are completely healed (Palese et al., 2004). Therefore to provide individualized care for their elderly relatives families hire home eldercare assistants and these positions are almost exclusively filled by migrant women from East Europe. Moreover the relative low cost of employing migrant workers puts this kind of private arrangement in reach of even lower middle-class families (Glucksmann and Lyon, 2006).

In order to better understand the requirements of this occupation it is important to define what the label actually means. The first type of job involves live-in eldercare work, which requires cohabiting with the elders 24 hours a day, usually for a minimum of five to a maximum of seven days a week, and the second type involves live-out eldercare work, which is usually defined by a shift of eight hours a day five

days a week. The other distinction is related to the physical and mental conditions of the elderly person. Some care workers look after non-self-sufficient elders with various kinds of physical or mental disabilities ranging from Alzheimer's and Parkinson's to complete paralysis, while others simply provide companionship to frail elders, who, while self-sufficient, do not feel safe left alone. These different jobs generate different relationships, needs and conflicts but also share many similarities.

The literature showed how poverty drove women to leave their own families behind in order to work for wealthy households elsewhere and commonly these women leave their children to the grandparents and in few cases they bring the family with them (Williams and Gavanas, 2008; Taylor et al., 2005).

Many studies conducted throughout the world have highlighted that health care profession is a one of the most stressful occupation (McNeely, 2005; Michie and Williams, 2003; Gruetzer, 2001; Weinberg and Creed, 2000; Leiter et al., 1998; Firth-Cozens and Greenhalgh, 1997) related to psychophysical diseases.

Health care workers can often develop anxiety and depression or psychosomatic diseases (Michie and Williams, 2003; Weinberg and Creed, 2000; Leiter et al., 1998; Firth-Cozens and Greenhalgh, 1997; Gallant et al., 1997; Williamson and Schulz, 1993) and in particular Dura et al. (1991) found that nearly one quarter of care workers met the criteria for depression whilst in the care-giving role, although they had never been diagnosed with depression prior to their stating the job. Risks for psychological distress or depression in this group are related to gender, age, health status, ethnic and cultural affiliation, and lack of social support (Gruetzer, 2001).

Moreover healthcare work is particularly physically demanding (Skotte et al., 2002) and in a survey involving more than 8000 healthcare workers in eldercare 23 per cent, 28 per cent, and 12 per cent reported chronic pain respectively in the low back, neck/shoulders, and knees. This has been confirmed in another study of chronic musculoskeletal pain in care workers (Holtermann et al., 2010).

Carers of people with both physical and cognitive impairments have higher scores for objective burden of caring than those caring for people with either type of impairment alone.

There are many stress factors in the workplace of care workers that have been shown to increase the risk of distress; for example, an increasing workload, contact with suffering and dying patients, verbal and physical abuse by patients, the need to hide negative emotional responses, risk of litigation, role conflicts between professions, and organizational changes (McNeely, 2005).

In addition, many studies have shown that levels of dissatisfaction and distress are high among care workers and may even be higher than among workers in other occupations. Job satisfaction, fostered by the intrinsic rewards of helping others, predicts retention among direct care workers. Intrinsic rewards, however, are often accompanied by the physical and emotional demands of providing care and by inadequate

extrinsic rewards (Geiger-Brown et al., 2007; Stacey, 2005; Benjamin and Matthias, 2004).

Moreover there is increasing interest in examining the factors that help care workers successfully manage their role, while minimizing the effect on their mood and general well-being. Previous studies have looked at these coping strategies and feelings of competence have shown that unrealistic expectations of a dependant increases carers' risk of depression, and conversely a reduction of carers' expectations is associated with lower rates of depression. Furthermore, carers who experience feelings of powerlessness, lack of control, and unpreparedness have higher levels of depression (Ballard et al., 1995).

Other studies suggest that care workers who use more active coping strategies, such as problem solving, experience fewer symptoms of depression than do those who rely on more passive methods (Coon et al., 2004).

In terms of other individual characteristics, ethnicity has a substantial impact on the care-workers' experience. Comprehensive reviews of the literature have identified differences in the stress process, psychological outcomes, and service utilization among care workers of different racial and ethnic backgrounds (Connel et al., 1997). Studies consistently show that the role of national, ethnic, and acculturation will affect psychosocial and health outcomes (Taloyan et al., 2011; Sam and Berry, 2010; Dey and Lucas, 2006; Berry, 2003; Kopp, Szedmak and Skrabski, 1998) and important differences in perceived burden and depression among African-American, White, and Hispanic care-workers (Sullivan et al., 2007; Coatsworth et al., 2005; Berry and Sam, 2003) were found.

In this perspective also the Eastern European eldercare workers show risk factors related to cultural dimensions (behavioural and adaptive styles and acculturation strategies) which may deeply influence psychological and physical health conditions. In fact among these workers it has just been argued the relevance of health behaviours such as smoking, patterns of alcohol intake, and dietary factors (Bobak et al., 1999).

In addition, educational attainment is an important factor contributing to chances of obtaining jobs for these migrant women. Previous research indicates that Eastern European migrant workers who have a higher educational degree have higher chances to find jobs and, therefore, 92% of people with high school graduate or more qualified (health and nursing assistants, economic studies) leave the Eastern Europe (Russia, Ukraine, Poland) to U.S., Western and Southern Europe (Robila, 2010). Furthermore the higher levels of education provide a greater capacity to speak foreign languages fluently which leads to better adjustment and greater job opportunities. Moreover, concerning personality characteristics, a study conducted by Allik et. al. (2009) on most common personality traits in Eastern European population using the Big Five Questionnaire (Allik and McCrae, 2002; Costa and McCrae, 1992) revealed Conscientiousness and Neuroticism as typical aspects of this population rather than Openness and Agreeableness.

There is, therefore, much support for effects of individual differences (ID) in work-related stress models. Different types of individual difference variables can be relevant in the stress process: demographic variables (gender, age, nationality,

marital status, job tenure, job title, and hierarchical level) have been shown to be related to job stressor/health relationships (Dua, 1994; Lind and Otte, 1994) and personality and coping can play major roles in the processes by which psychosocial work conditions influence mental and physical health outcomes and therefore organizational health. Particularly interesting in the literature on stress and wellbeing at work are personality traits such as Type A and Type D associated with psychosocial stressors, anxiety, depressive and physical health symptoms (Spector, 2003; DeNeve and Cooper, 1998; Parkes, 1994; Glass and Carver, 1980).

The potential influence of individual differences is implicit in models that treat stressors as subjective (such as the Effort-Reward imbalance model, Siegrist 1996) and becomes more explicit in transactional approaches that often place an emphasis on the role of subjective perceptions of the environment, and are more likely to acknowledge the possible impact of factors, such as differences in coping, appraisal, personality, and locus of control. Particularly relevant in the field of occupational stress was the approach of the Demand-Resources-Individual effects (DRIVE) model proposed by Mark and Smith (2008) which simultaneously compared a number of job characteristics (the DCS and ERI dimensions) and individual difference variables (in the forms of demographics, attributional style and coping strategies) in the prediction of anxiety, depression, and job satisfaction. This model tried to account for the role of important individual difference factors in influencing the possible health-related outcomes that result from subjective stressful perceptions and was considered as framework of reference in studies that proposed multi - dimensional model of stress that integrates all the ethnicity aspects with work - related stress dimensions and investigate the associations between individual differences, ethnicity, work characteristics, appraisals and health outcomes in a sample of workers varying in ethnicity (Capasso, 2015; Capasso and Zurlo, 2015; Capasso, Zurlo and Smith, 2016).

This proposed ethnicity and work stress model tested in studies reported above includes sixteen factors extracted from principal component analyses (PCA, method: varimax, communalities > .35, parallel analyses, scree test, eigenvalue > 1, item factor loadings > .30) of all the subscales for each dimension of the questionnaire described in previous researches and submitted to a sample of migrant workers. In particular the factors extracted were the followings: Work demands, Intrinsic/Extrinsic rewards and Work resources derived by traditional job stress variables (from DCS and ERI models); Emotional-Relational coping, Objective coping, Type A behaviour, Negative Affectivity and Social Inhibition for individual differences; Perceived racial discrimination, Affirmation/Maintenance culture and Search Identity/Adoption of the host culture for ethnicity variables; perceived job satisfaction, perceived job stress hypothesized as appraisals and Anxious-Depressive disorders, Interpersonal disorders and General health for subjective reports of health.

Aims

The aim of the current study was to test the application in a sample of Eastern European eldercare workers of a multi-dimensional model of stress that takes as framework of references DRIVE model (Mark and Smith, 2008) and previous

studies on occupational health and cultural aspects conducted by Capasso (2015), Capasso and Zurlo (2015), Capasso, Zurlo and Smith (2016).

In particular this model hypothesized that there will be significant profiles of associations between individual differences, work characteristics, ethnicity dimensions, perceived job satisfaction/stress and health outcomes in Eastern European eldercare workers.

Hypothesis 1: Negative coping and personality behaviours, work demands, racial discrimination, specific acculturation strategies and perceived work stress will be associated with high levels of anxious - depressive disorders, interpersonal disorders and poor general health.

Hypothesis 2: Work resources and rewards, positive coping, specific acculturation strategies and perceived job satisfaction will be associated with low levels of health disorders.

Methodology

Sample

A total of 312 questionnaires were distributed, with 250 returned and considered valid (response rate = 80.1%) and the sample of the study consisted of 250 Eastern European eldercare workers employed in Southern Italy and recruited from different associations of immigrants.

Ethical approval was provided by University of Naples "Federico II" and informed consent was achieved within the questionnaire where participants could not continue beyond the consent page without agreeing.

Around one third (38.6%) lived in Italy from more than 5 years, all were women (Age Mean=43.18; SD=4.25) and most of them were married (94.8 %), with a high level of education (94.4 %), worked full-time (93.2 %) and had fixed contracts (97.2 %).

Measures

The questionnaire used for this study consisted of five sections.

Section 1 included measures of the respondent's personal and biographical details (e.g. gender, age, education, marital status) and job characteristics (e.g. employment, type of contract, number of hours worked).

Section 2 measured individual characteristics and cultural dimensions using: the Coping Style Inventory (Cooper, Sloan and Williams, 1988), a measure of strategies for coping with job stress consisting of 28 items divided into 6 subscales such as involvement, home-work relationships, social support, time management, logic, task strategies; the Bortner's Type A Behavioural Style Inventory (Bortner, 1969) comprising 14 bipolar adjectival items and 3 subscales (time conscious behavior, emotional suppressive/ambitious - competitive behavior, efficient behaviour); the Type D Personality (Denollet, 2005) consisting of 14 items and the 2 subscales of negative affectivity and social inhibition; the Phinney's Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) consisting of 15 items and two subscales namely ethnic identity search, and

affirmation, belonging, and commitment and Berry's measures of ethnic identity and acculturation (1997) involving two items asking "Is it considered to be of value to maintain cultural identity and characteristics?" and "Is it considered to be of value to maintain relationships with other groups?".

Section 3 measured work characteristics; the Job Content Questionnaire (JCQ; Karasek, 1985) consisting of 48 items and 3 subscales job demand, job control and job support and the Effort-Reward Imbalance (ERI test; Siegrist 1996; Zurlo et al., 2010) comprising 23 items and 4 scales of effort, esteem reward, job security prospects reward and overcommitment.

Section 4 referred to appraisals; the Job Satisfaction Scale (Warr, Cook and Wall, 1979; Zurlo et al., 2013) consisting of 15 items divided into 4 subscales such as intrinsic and job itself satisfaction, working conditions satisfaction, extrinsic job satisfaction, employee relations satisfaction; a single item asking "In general, how stressful do you find your job?" (Smith et al., 2000) and a single item of reported discrimination at work on the basis of race or ethnicity (Smith et al., 2000).

Section 5 referred to subjective reports of health; the Symptom Checklist 90 R (SCL-90-R, Derogatis, 1994) consisting of the 90 items and the following subscales: anxiety, depression, somatization, obsessive-compulsive, interpersonal sensitivity, hostility, phobic anxiety, paranoid ideation and psychoticism and a single item asking "Over the past 12 months, how would you say your general health has been?" (Smith et al., 2000).

Statistical Analysis

The components extracted from PCA for individual differences, ethnicity dimensions, work characteristics, appraisals were considered as potential risk factors (independent variables) in the prediction of health disorders and, therefore, logistic regression analyses (method: enter, first indicator contrast) between health outcomes and the independent variables (with $p < .05$ as the entry criterion and $p > .01$ as the removal criterion and the Hosmer and Lemeshow Goodness-of-Fit statistic fixed at $p > .05$) were carried out to determine the main effects of the independent variables in the prediction of subjective reports of health (dependent variables) and the potential interaction effects of work demands and appraisals in the prediction of health problems.

Results

Table 1 below shows descriptive statistics for age, ethnicity, education, marital status, type of job, work status, type of contract.

Logistic regression analyses were carried out to explore the main and the potential interaction effects of individual differences, work characteristics, ethnicity dimensions and appraisals on psychophysical outcomes in the Eastern European care workers.

Table 2 above shows the multi-variable associations of individual differences, work characteristics, and appraisals on psychological and physical health conditions for the Eastern European group.

Table 1: Descriptive statistics of Eastern European workers (Age Mean= 43.18; SD= 4.25).

Descriptives	N	%
<i>Gender</i>		
Female	250	100
<i>Marital Status</i>		
Married	237	94.8
Unmarried	13	5.2
<i>Education</i>		
Middle School	4	1.6
High School	236	94.4
Degree	10	4.0
<i>Work Status</i>		
Part-time	17	6.8
Full-time	233	93.2
<i>Contract type</i>		
Fixed term contract	243	97.2

The group of Eastern European workers with perception of high work demands (OR=4.006, C.I.=2.254-7.118) and who favored Type A behaviors (OR=2.586, C.I.=1.418-4.716) and negative affectivity (OR=2.386, C.I.=1.370-4.156) were more likely to suffer anxious-depressive disorders while those who perceived high levels of job satisfaction (OR=.527, C.I.=.303-.916) were less likely to suffer from psychological disorders.

For Interpersonal disorders, the group of Eastern European workers who perceived high levels of work demands (OR=5.328; C.I.=2.740-10.361) and who favored Type A behaviors (OR=2.747, C.I.=1.393-5.417) were more likely to suffer interpersonal disorders while those with high recourse to emotional coping (OR=.403, C.I.=.221-.736) were less likely to suffer this psychological disorder. Also with respect to this psychological outcome the association between perceived job satisfaction (OR=.427, C.I.=.211-.864) and lower likelihood of suffering interpersonal disorders was shown.

Finally for general health, the Eastern European women who perceived high levels of work demands (OR=2.001, C.I.=1.020-3.925) and who favored Type A behaviors (OR=3.141, C.I.=1.585-6.223) were more likely to suffer poor health, while those with high recourse to objective coping (OR=.297, C.I.=.158-.559) and affirmation/maintenance culture behaviors (OR=.465, C.I.=.243-.890) were less likely to report poorer general health.

Discussion

The application of our model provides a framework that illustrates how psychosocial and individual variables can influence occupational health in this type of workers as well as the central role played by ethnicity, work characteristics and personality patterns in this multi - dimensional perspective. Results related to different factors described give a contribution to this research area confirming previous literature on psychophysical health conditions and individual characteristics in care workers and integrating all these aspects with ethnicity dimensions in a general model of work stress.

In fact findings were in accordance with previous

Table 2: Multi-variable associations of individual differences, work characteristics, ethnicity dimensions and appraisals on psychophysical outcomes.

	Anxious-Depressive disorders		Interpersonal disorders		General health	
	OR	C.I.	OR	C.I.	OR	C.I.
<i>Work characteristics</i>						
Work demands						
Low	1.00		1.00		1.00	
High	4.006	2.254-7.118*	5.328	2.740-10.361*	2.001	1.020-3.925*
Intrinsic/Extrinsic						
Rewards						
Low	1.00		1.00		1.00	
High	.920	.482-1.756	.816	.400-1.663	.751	.380-1.483
Work resources						
Low	1.00		1.00		1.00	
High	.870	.315-2.405	.885	.453-1.730	.858	.433-1.699
<i>Coping styles</i>						
Emotional-relational coping						
Low	1.00		1.00		1.00	
High	.782	.391-1.562	.403	.221-.736*	.640	.320-1.281
Objective coping						
Low	1.00		1.00		1.00	
High	.739	.396-1.381	.752	.382-1.481	.297	.158-.559*
<i>Personality</i>						
Type A behavior						
Low	1.00		1.00		1.00	
High	2.586	1.418-4.716*	2.747	1.393-5.417*	3.141	1.585-6.223*
Negative affectivity						
Low	1.00		1.00		1.00	
High	2.386	1.370-4.156*	1.415	.706-2.837	.955	.467-1.953
Social inhibition						
Low	1.00		1.00		1.00	
High	1.342	.695-2.590	1.548	.842-2.844	1.518	.754-3.054
<i>Appraisals</i>						
Perceived job satisfaction						
Low	1.00		1.00		1.00	
High	.527	.303-.916*	.427	.211-.864*	.856	.414-1.770
Perceived job stress						
Low	1.00		1.00		1.00	
High	1.498	.816-2.751	1.181	.610-2.287	1.334	.651-2.734
<i>Cultural dimensions</i>						
Perceived racial discrimination	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Affirmation/Maintenance culture						
Low	1.00		1.00		1.00	
High	.885	.560-1.400	.737	.452-1.202	.465	.243-.890*
Search Identity/Adoption of the host culture						
Low	1.00		1.00		1.00	
High	1.137	.711-1.819	1.456	.921-2.302	1.373	.713-2.645

literature which reported that many care workers are at risk of experiencing clinical depression and anxiety (Molyneux et al., 2008; Michie and Williams, 2003; Gruetzener, 2001; Weinberg and Creed, 2000; Leiter et al., 1998; Firth-Cozens

and Greenhalgh, 1997; Gallant et al., 1997; Dura et al., 1991) and with studies describing healthcare work as job particularly physically demanding (Skotte et al., 2002) and at risk of chronic musculoskeletal pain (Holtermann et al., 2011). In particular

among Eastern European eldercare workers in the prediction of the anxious-depressive disorders, the women with perception of high work demands (McNeely, 2005; Gruetzener, 2001) and with high recourse to Type A behaviors and negative affectivity were more likely to report anxious-depressive disorders and those who perceived high levels of job satisfaction were less likely to suffer anxious-depressive disorders (as reported in Karasek, 1992).

Considering the risk of suffering interpersonal disorders, the group of Eastern European workers who perceived high levels of work demands and who favored Type A behaviors were more likely to suffer relational disorders while those with high recourse to emotional coping were less likely to suffer this psychological disorders. Also with respect to this psychological outcome the association between perceived job satisfaction and lower likelihood to report relational disorders was observed. Finally with respect to general health, the Eastern European women who perceived high levels of work demands (Holtermann et al., 2010; Skotte et al., 2002) and who favored Type A behaviors were more likely to suffer poor health, while those with high recourse to objective coping and affirmation/maintenance culture behaviors were less likely to report poorer general health conditions.

Results on the effects of individual differences confirmed the findings reported in literature on the independent effects of Type A and negative affectivity behaviors on somatic and psychological symptoms (Terry et al., 1993; Parkes, 1990; Brief et al., 1988; Watson and Clark, 1984). However the influence of ethnicity on this job type in predicting health outcomes in our sample reflected data reported by Connel et al., 2001; Calderon and Tennstedt, 1998; Farran et al., 1997; Harrwood et al., 1998; Cox, 1995; Alten, 1993.

In this respect, our findings on work demands and coping strategies particularly relevant for this kind of workers; Type A behavior and negative affectivity associated to somatic and psychological symptoms and an affirmation/maintenance culture strategy (i.e. interest in engaging with their ethnic culture) considered as a typical behavior helpful for reducing the risk of physical problems, confirmed how the application in a sample of Eastern European eldercare workers of a multi-dimensional model of stress (based on Mark and Smith, 2008; Capasso, 2015; Capasso and Zurlo, 2015; Capasso, Zurlo and Smith, 2016) were in accordance with new approaches in the occupational research area and the integration of work-related stress dimensions with ethnicity aspects.

This type of approach is essential to consider different aspects of ethnicity giving closer attention to the acculturation strategies rather than perceived racial discrimination that influence over the relationships between each work - related stress dimension and health outcomes. Furthermore the employment status of this ethnic group and certain aspects of the migrant population such as school education and type A behavioural pattern may contribute to improve a different format of intervention aimed at supporting migrant workers in the relationships within and with the workplace.

Despite these results, the present study had several limitations. Firstly, the cross-sectional design precludes any reference to temporal or causal directions of observed statistical associations. Secondly, we didn't consider a comparative group of Italian eldercare workers because this particular job fitted with this specific ethnic group.

Thirdly, the analyses only considered the presence/absence of physical diseases without looking in more detail at the different types of physical problems such as cardiovascular diseases, musculo-skeletal diseases, dermatological diseases, respiratory and gastric diseases. This lack might be an input to improve a study recurring to an epidemiological approach.

However the total contribution of the interaction effects to the application of the model in this ethnic group was marginal and for this reason it could be important to investigate in future research whether the effects of work demands and ethnicity dimensions on health outcomes may be independent or combined by recurring to different approach such as combined effects.

Despite these limitations, our study reveals the most relevant stress dimensions that should be evaluated to prevent the negative effects of stress on eldercare workers from Eastern Europe and gives a contribution in the Ethnicity and work-related stress research to better understand the role of personality and cultural dimensions in work environment and their effects in promoting health of migrant workers.

Implications for further research

The model is a good representation of the relationships between the tested variables in this sample population and the addition of the ethnicity aspects integrates job characteristics models such as the DCS, as well as aspects from the ERI model, and represents a potential development from transactional stress models.

Therefore the importance of the background in terms of values and social conditions of the host country is also relevant to define the position taken by the migrants and how they can deal with their minorities status and favour to specific acculturation strategy. These cultural aspects need to look at in more details for further development of research.

Another implication is related to the comparison between migrant and Italian workers with respect to occupational health problems. In fact migrants work more often than native workers in sectors, occupations and jobs where working conditions are more strenuous and more physically stressful and these different conditions can lead to specific psychophysical problems. Therefore it was important to study different profiles in migrant and Italian groups and further more detailed research on each ethnic group and relative control group is required to clarify this.

Furthermore in terms of interaction effects, future research and applications of the model in each different ethnic group may shed more light on these indirect effects in the workplace by improving the methodology to test buffering or increasing effects.

Finally these aspects represented a relevant starting point to carry out future research in this area integrating the methodology and focusing on the proposed cultural aspects.

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CONFLICTS OF INTEREST

None

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ADDRESS FOR CORRESPONDENCE

Dr. Roberto Capasso, Department of Political Sciences, University of Naples "Federico II", Via Rodinò, 22, 80133, Naples, Italy, e-mail: roberto.capasso@unina.it