

Work characteristics and occupational health in different ethnic groups

Roberto CAPASSO, Maria Clelia ZURLO and Andrew SMITH

Department of Political Sciences, University of Naples "Federico II", Naples, Italy. Centre for Occupational and Health Psychology, School of Psychology, Cardiff University, Cardiff, UK

Abstract. This paper reports a study on work characteristics and health in workers varying in ethnicity in Southern Italy and takes the Demands-Resources-Individual-Effects (DRIVE) model (Mark & Smith, 2008) and studies conducted on ethnicity and occupational health as the frame of reference. A questionnaire measuring work characteristics and subjective reports of health was submitted to workers from Eastern Europe, Morocco, Ghana and Italy. Results confirmed the main effects of work characteristics on psychophysical health and the influence of job type and ethnicity. Occupational sector and country effects suggested significant effects over the relationships between each work-related stress dimension and psychophysical health.

Keywords. migrant workers, ethnicity dimensions, work characteristics, occupational health.

1. Introduction

In the last two decades there has been little research on ethnicity and occupational health among workers and measures of work characteristics and/or work stress have been developed largely within single ethnic group data sets. Usually approaches are based on data collected from mainly white workers and previous research on ethnic minorities and occupational health either used an epidemiological approach, an interactional or structural approach, a management standards approach focused on work stressors, or a mixed approach that tries to integrate social and cultural aspects. Most studies measure ethnicity as a descriptor of the working population studied or as an objective category (i.e. country of birth, nationality, language, skin colour, origin, racial group) associated with work characteristics or psychophysical health outcomes (Emerson & Murphy, 2014; Krings, Johnston, Binggeli, & Maggiori, 2014; Linnabery, Stuhlmacher, & Towler, 2014; Nazroo, 2003; Szczepura et al., 2004).

In the field of occupational stress, the Demand-Resources-Individual effects (DRIVE) model proposed by Mark and Smith (2008) simultaneously compared a number of job characteristics (the DCS and ERI dimensions; Karasek, 1985, Siegrist, 1996) and individual difference variables (in the forms of demographics, attributional style and coping strategies) in the prediction of anxiety, depression, and job satisfaction. Based on the DRIVE model, a study conducted by Capasso and Zurlo (2015) suggested that the aspects of traditional job stress models (the DCS and ERI) may be combined with individual differences in the forms of coping styles and personality behaviours; appraisals (job satisfaction/stress) and ethnicity variables in the prediction of psychophysical health outcomes while considering the cultural dimensions not only as descriptor of working population studied but also as individual difference or potential source of stress.

Italy has registered more than four million immigrants (4,859,000) and the growth of informal employment depended on the "open door" policy of the late 1990s and the law 943/86, article 4, paragraph 1, which protects the right to family reunification. The highest number of immigrants reside in North Italy (60%) compared to Central (27%)

and South Italy (13%) and the Italian immigrant population is extremely young (70% of immigrants falling in the range of 15 to 44 years of age). In South Italy the largest ethnic minority groups are Eastern European (48.7%), North African (19.7%) and Black African (13.9%) and 73 % are registered as manual workers (ISTAT, 2014).

On the basis of the previous research on ethnicity and occupational health in migrant workers, this study aims to look in more detail at the significant associations between work characteristics and health outcomes in different ethnic groups. In particular the current study focuses on a part of the associations suggested by DRIVE model and the previous study conducted by Capasso and Zurlo (2015) and evaluates whether the effects of job characteristics on psychophysical health conditions vary with job type and ethnicity giving closer attention to the same types of workers varying in ethnicity and the Italian groups in different jobs.

2. Methods

2.1. Sample and Materials

Multi-stage sampling was used in the selection of the study sample using the following inclusion criteria: largest ethnic communities in South Italy, employment, aged between 25-45 years and language capacities. We paid close attention to job type in order to reduce the confounding factors related to different work environments. A total of 1061 copies of questionnaire were distributed, with 900 returned and considered valid (response rate = 84.8%) and the sample of the study consisted of: Eastern European care workers ($N = 250$), Moroccan factory workers ($N = 250$), Ghanaian masons ($N = 200$), Italian factory workers ($N = 100$) and Italian masons ($N = 100$). The migrant workers were recruited from different associations which provided help with looking for jobs, family reunification, socioeconomic and psychological support.

The questionnaire consisted of three sections.

Section 1: respondent's personal and biographical details (e.g., gender, age, nationality, education) and job characteristics (e.g., employment, type of contract, number of hours worked).

Section 2: work characteristics; Job Content Questionnaire (JCQ; Karasek, 1985), Effort-Reward Imbalance (ERI test; Siegrist, 1996).

Section 3: psychophysical health; Symptom Checklist 90 R (SCL-90-R, Derogatis, 1994) and a single item asking "Over the past 12 months, how would you say your general health has been?" (Smith et al., 2000).

Principal component analyses (PCA) of the subscales for each dimension reported in the questionnaire above were run to reduce the huge numbers of variables and all the factors extracted for this study were split at the median into low and high groups (Capasso, 2015). The statistical analyses carried out for the whole sample (using SPSS-20 software) were: descriptive analyses for gender, age, ethnicity, marital status, education, type of job, work status and type of contract; and forward LR logistic regression analyses between the psychophysical health outcomes and work characteristics in each group.

3. Results

3.1. Descriptives

Data on socio-demographic and job characteristics of each ethnic group showed that

the Eastern European care workers were women (Age $M = 43.18$), married (94.8%) with a high level of education (94.4%). Most of them worked full-time (93.2%), with fixed contracts (97.2%) and they earned around 800 euros/month.

Most of the Moroccan factory workers (Age $M = 40.78$) were men (90%), married (83.2%) with a medium level of education (57.2%). All worked full-time with temporary contracts (65.9%) and they earned around 600 euros/month. The Italian factory workers (Age $M = 42.78$) were men, most of them were married (92%) with a high level of education (93%). All worked full-time and most of them had permanent contracts (81%) and they earned around 1200 euros/month.

Among the Ghanaian masons (Age $M = 38.78$), 91% were men, all of them were married and 95% got a medium level of education. All worked part-time, with temporary contracts (98%) and they earned around 400 euros/month while their Italian counterparts (Age $M = 40.61$) showed similar percentage in terms of marital status and education and differences in type of contract (83% with fixed term contracts) and salary (around 800 euros/month).

3.2. Significant effects of work characteristics in different ethnic groups: same types of workers varying in ethnicity

Logistic regression analyses were carried out to determine the main significant effects of work characteristics on health outcomes giving closer attention to same types of workers varying in ethnicity (see Tables 1, 2, 3 below).

Table 1. Multi-variable associations of work characteristics with anxious-depressive disorders.

	Eastern European care workers	Moroccan factory workers	Italian factory workers	Ghanaian masons	Italian masons
	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)
Work Demands					
Low	1.00	1.00	1.00	1.00	1.00
High	4.01 (2.25-7.12*)	1.14 (.66-1.98)	1.95 (1.11-3.43*)	1.52 (.83-2.81)	1.12 (.68-1.85)
Rewards					
Low	1.00	1.00	1.00	1.00	1.00
High	.92 (.48-1.76)	.34 (.17-.67*)	.13 (.07-.25*)	.75 (.40-1.40)	.36 (.17-.73*)
Work Resources					
Low	1.00	1.00	1.00	1.00	1.00
High	.87 (.31-2.40)	.92 (.33-2.52)	.82 (.29-2.32)	.78 (.22-2.81)	.99 (.37-2.65)

* $p < .05$, ** $p < .001$

Table 1 above shows that the group of Moroccan workers with high perception of rewards were less likely to suffer anxious-depressive disorders as were the group of Italian factory workers who also reported significant associations between high work demands and risk of reporting this psychological disorder. Among the Ghanaian and Italian masons, data show only significant multivariable associations between high perception of rewards and low likelihood of reporting anxious-depressive disorders for Italian masons.

Table 2. Multi-variable associations of work characteristics with relational disorders.

	Eastern European care workers	Moroccan factory workers	Italian factory workers	Ghanaian Masons	Italian masons
	OR (CI)	OR (CI)	OR (CI)	OR (CI)	OR (CI)
Work Demands					
Low	1.00	1.00	1.00	1.00	1.00
High	5.33 (2.74-10.36*)	1.06 (.59-1.90)	1.87 (1.11-3.16*)	1.90 (1.04-3.44*)	1.97 (1.01-3.83*)

Rewards					
Low	1.00	1.00	1.00	1.00	1.00
High	.82 (.40-1.66)	.36 (.21-.62*)	.84 (.41-1.72)	.93 (.49-1.77)	.46 (.23-.91*)
Work					
Resources					
Low	1.00	1.00	1.00	1.00	1.00
High	.88 (.45-1.73)	.84 (.42-1.68)	.35 (.17-.71*)	.96 (.51-1.80)	.77 (.41-1.44)

* $p < .05$, ** $p < .001$

Table 2 shows that the group of Moroccan factory workers who perceived high levels of rewards were less likely to suffer relational disorders while the Italian factory workers who perceived high levels of work demands were more likely to report relational disorders and those with high perception of work resources were less likely to suffer this psychological disorder. Moreover the Ghanaian masons who perceived high levels of work demands were more likely to suffer relational disorders as were the Italian masons who also perceived higher rewards associated with lower risk of relational disorders.

Table 3. Multi-variable associations of work characteristics with general health.

	Eastern European care workers	Moroccan factory workers	Italian factory workers	Ghanaian masons	Italian masons
	OR(CI)	OR(CI)	OR(CI)	OR(CI)	OR(CI)
Work					
Demands					
Low	1.00	1.00	1.00	1.00	1.00
High	2.00 (1.02-3.92*)	1.52 (.71-3.25)	1.38 (.73-2.61)	1.62 (.72-3.69)	2.11 (1.08-4.14*)
Rewards					
Low	1.00	1.00	1.00	1.00	1.00
High	.75 (.38-1.48)	.41 (.21-.78*)	.69 (.35-1.36)	.82 (.40-1.67)	.73 (.38-1.43)
Work					
Resources					
Low	1.00	1.00	1.00	1.00	1.00
High	.86 (.43-1.70)	.56 (.27-1.16)	.78 (.39-1.59)	.34 (.15-.77*)	.70 (.35-1.39)

* $p < .05$, ** $p < .001$

Finally data reported in Table 3 show that the group of Moroccan workers who perceived high levels of rewards were less likely to suffer poor health. Furthermore the group of Ghanaian workers who perceived high levels of work resources were less likely to suffer poor health while among the Italian masons, high work demands were associated with risk of reporting poorer health conditions.

3.3. The effects of work characteristics in Italian groups

This section focuses on the significant effects of work characteristics on health outcomes comparing the Italian groups (see Tables 1, 2, 3 above). Therefore in the prediction of health outcomes, data show that the group of Italian factory workers with high perception of rewards were less likely to suffer anxious-depressive disorders as were the group of Italian masons and only the factory workers reported significant associations between high work demands and risk of reporting this psychological disorder. Moreover both the Italian groups perceived high levels of work demands associated with higher risk of suffering relational disorders, while the Italian factory workers with high perception of work resources were less likely to suffer this psychological disorder and the Italian masons perceived higher rewards significantly associated with lower risk of suffering relational disorders. Data on general health show only significant associations between high work demands and risk of reporting poorer health conditions for Italian masons.

4. Discussion and Conclusion

The results showed significant effects of work characteristics on occupational health

outcomes and these effects were influenced by job type and ethnicity. The Eastern European care workers were influenced by high job demands as were the Italian masons. In contrast, the Moroccan factory workers and Italian masons were affected by job rewards. Effects of job resources were generally rare. Although these differences between groups were apparent all of the groups showed the same numerical trends with high demands leading to poor health, and high rewards and resources being beneficial. Looking in more detail at the significant associations of work characteristics and occupational health, among factory workers results on rewards and work demands were in accordance with studies conducted by Kurz (2002), Li et al. (2007), Inoue et al. (2009) while among masons, the impact of work demands on specific poor general health was in accordance with studies reported in literature (Anton et al., 2005; Entzel et al., 2007).

The differences between the groups could reflect education, job' contract and salary. In fact all the Eastern Europeans had a high school education and got fixed term contracts in contrast with the Moroccans and Ghanaians who had a middle school education and temporary contracts. These data represented the current differences between the migrant workers with respect to the levels of education and type of contracts while the actual differences between the ethnic groups in terms of country effects need to be investigated considering their specific acculturation strategies. Moreover the Italians got fixed or permanent contracts and higher salary with respect to the migrant counterparts (Capasso, 2015) showing the actual inequality between Italians and migrants in job security and relative wage. Between the Italians groups, factory workers got better working conditions than masons in terms of salary and type of contract. However, there were few differences between the Italian workers doing different jobs so it would appear that ethnicity is more important than job type.

Although job type appears relatively unimportant for the Italian workers, it is apparent that the disadvantageous conditions that migrant workers face may be explained by the sectors and occupations where they are employed and not only for the fact of being migrants. Therefore in the current sample the employment status of each ethnic group and certain aspects of the migrant population such as school education, genetic predispositions and body structure, behavioural patterns and previous working experience showed a significant link between country effects and occupational sectors and these results suggested further more detailed research on each ethnic group and relative control group to evaluate the influence of job type and ethnicity over the relationships between each work-related stress dimension and psychophysical health outcomes. Moreover it might be important consider that each ethnic group is exposed to specific hazards depending on their job type (e.g. physical demanding work, injuries) and health-related behaviours. Different statistical methodologies such as meta-analysis should look in more detail at the potential confounding variables e.g. age, working conditions, gender may be used. It is also important to find a potential Italian counterparts for the Eastern European care workers because these jobs are almost exclusively filled by these migrant women due to the working conditions which require cohabiting with the elders 24 hours a day.

In conclusion, the present study demonstrates the importance of the integration of work-related stress research and the cross-cultural approach. Further investigations are now required to increase our knowledge of migrant workers in the workplace.

References

- Anton, D., Rosecrance, J.C., Gerr, F., Merlino, L.A., & Cook, T.M. (2005). Effect of concrete block weight and wall height on electromyographic activity and heart rate of masons. *Ergonomics*, 48, 1314–1330.
- Capasso, R. (2015). Ethnicity and work-related stress: migrant workers in southern Italy

- (PhD dissertation). University of Naples “Federico II”, Naples, Italy.
- Capasso, R., & Zurlo, M.C. (2015). Ethnicity and work-related stress: migrant workers in southern Italy. In S. Sharples, S. Shorrock and P. Waterson (Eds.), *Proceedings of the International conference on Ergonomics & Human Factors 2015* (pp. 383-390). London: Taylor & Francis.
- Derogatis, L.R. (1994). *Symptom Checklist 90–R: Administration, scoring, and procedures manual* (3rd ed.). Minneapolis, MN: National Computer Systems.
- Emerson, K.T.U., & Murphy, M.C. (2014). Identity Threat at Work: How Social Identity Threat and Situational Cues Contribute to Racial and Ethnic Disparities in the Workplace. *Cultural Diversity and Ethnic Minority Psychology*, 20(4), 508-520.
- Entzel, P., Albers, J., & Welch, L. (2007). Best practices for preventing musculoskeletal disorders in masonry: Stakeholders perspectives. *Applications of Ergonomics*, 38, 557–566.
- Karasek, R.A. (1985). *Job Content Questionnaire and user's guide*. Lowell, MA: University of Massachusetts.
- Kurz, D. (2002). *Poor Urban Mothers and the Care of Teenage Children*. New York: Routledge.
- Krings, F., Johnston, C., Binggeli, S., & Maggiori, C. (2014). Selective Incivility: Immigrant Groups Experience Subtle Workplace Discrimination at Different Rates. *Cultural Diversity and Ethnic Minority Psychology*, 20(4), 491-498.
- Inoue, A., Kawakami, N., Ishizaki, M. et al. (2010). Organizational justice, psychological distress, and work engagement in Japanese workers. *International Archives of Occupational Environmental Health*, 83, 29–38.
- ISTAT (Italian National Institute of Statistics) (2014). *Stima rapida della popolazione*. Retrieved December, 2014, from <http://www.istat.it/it/>.
- Li, L., Wang, H.M., Ye, X.J., Jiang, M.M., Lou, Q.Y., & Hesketh, T. (2007). The mental health status of Chinese rural-urban migrant workers: Comparison with permanent urban and rural dwellers. *Social Psychiatry and Psychiatric Epidemiology*, 42(9), 716–722.
- Linnabery, E., Stuhlmacher, A.F., & Towler, A. (2014). From Whence Cometh Their Strength: Social Support, Coping, and Well-Being of Black Women Professionals. *Cultural Diversity and Ethnic Minority Psychology*, 20(4), 541-549.
- Mark, G.M., & Smith, A.P. (2008). Stress models: a review and suggested new direction. In J. Houdmont and S. Leka (Eds.), *Occupational Health Psychology* (pp. 111-144). Nottingham: Nottingham University Press.
- Nazroo, J.Y. (2003). The structuring of ethnic inequalities in health: Economic position, racial discrimination and racism. *American Journal of Public Health*, 93, 277-284.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1, 27–41.
- Smith, A., Johal, S., Wadsworth, E., Peters, T., & Davey Smith, G. (2000). *The scale and impact of occupational stress: the Bristol Stress and Health at Work Study*. Health and Safety Executive Research Report no. 265, London, UK: HSE Books.
- Smith, A., Wadsworth, E., Shaw, C., Stansfeld, S., Bhui, K., & Dhillon, K. (2005). *Ethnicity, work characteristics, stress and health*. Health and Safety Executive Research Report no. 308. London, UK: HSE Books.
- Szczepura, A., Gumber, A., Clay, D., Davies, R., Elias, P., Johnson, M., Walker, I., & Owen, D. (2004). *Review of the occupational health and safety of Britain's ethnic minorities*. Health and Safety Executive Research Report no 221. London, UK: HSE Books.