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Occupational Resilience Assets Questionnaire (ORA-Q): a multilevel measure

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ABSTRACT. Objective: *The main aim of the present study is to present the Occupational Resilience Assets Questionnaire (ORA-Q), a questionnaire developed in three different levels (organizational, occupational, and personal) for assessing resilience resources at work. The purpose of the ORA-Q is to improve and facilitate research on resilience processes in the workplaces. Further the stress-buffering valence of the considered dimensions have been tested, too.*

Methods: *The development of the questionnaire is based on a survey of a sample of 1,518 Italian employees aged 18-55 years. Altogether 45 questions were tested with exploratory factor analysis, internal consistency and criterion validity.*

Results: *All the scales have good reliability. Principal component analysis enable to identify the hypothesized factors. Logistic regression analysis confirm the role of all resilience assets as buffer against stress conditions.*

Conclusions: *The Occupational Resilience Assets Questionnaire is a valid and reliable tool for international research and workplace surveys. The questionnaire seems to be comprehensive and to include the most relevant resilience resources according to several important theories on this topic. Differently from many tools for the assessment and improvement of the psychosocial work environment, the ORA-Q is useful as resilience measure in the workplace. Its three-level structure facilitates surveillance, benchmarking and evaluation of interventions.*

Key words: occupational health, resilience, psychological stress, measure.

RIASSUNTO. OCCUPATIONAL RESILIENCE ASSETS QUESTIONNAIRE (ORA-Q): UNO STRUMENTO MULTILIVELLO.

Obiettivo: Lo scopo principale del presente contributo è quello di presentare il questionario ORA-Q, Occupational Resilience Assets Questionnaire, uno strumento multilivello (organizzativo, occupazionale e individuale) per la misura delle risorse di resilienza negli ambienti di lavoro. Lo scopo dello strumento è quello di promuovere e facilitare lo studio dei processi di resilienza nelle organizzazioni di lavoro anche in prospettiva applicativa. È stata testata la valenza protettiva delle risorse di resilienza considerate.

Metodo: Il questionario è stato costruito a partire da un'indagine condotta su un campione di 1.518 lavoratori italiani di età compresa tra 18-55 anni. Complessivamente lo strumento consta di 45 domande che sono state sottoposte ad analisi fattoriale esplorativa, analisi della coerenza interna e di validità di criterio.

Risultati: Tutte le scale hanno una buona affidabilità. L'analisi delle componenti principali ha permesso di individuare i fattori ipotizzati e le regressioni logistiche hanno confermato il ruolo di tutte le risorse di resilienza come *buffer* rispetto a condizioni di stress.

Introduction

Recently, the psychosocial issue in work environment gained top priority for EU member countries.

Certainly, the well-known pathological consequences of psychosocial stressors (i.e. cardiovascular disease, mental disorders, absence due to sickness, and decreased motivation and productivity) are very significant for workers, workplaces, and society. Researchers studying adults exposed to stressful events have been considering resilience as a key concept since it is characterized as an outcome (1) reflecting the ability to sustain equilibrium and adaptive functioning under stressful circumstances (2).

Research on resilience processes outlines its multilevel nature. With reference to the work context, resilience may be considered as an organizational asset which operates at three different levels, i.e. organizational, occupational and personal (3).

There is now compelling evidence that a genuine and enduring resilience response is not rare but is common and not a sign of exceptional strength, but a fundamental feature of normal coping skills (4). A critical question is why some people and systems (i.e. organizations) are more or less likely to be resilient following exposure to potentially stressful conditions. Researchers suggested that there are multiple buffers against stress. These include person-centred variables and socio-contextual factors. Multiple independent protective factors may contribute to the overall likelihood of the resilient outcome (5-6).

To date, there are many tools for the assessment and the improvement of the psychosocial characteristics of work environment, but few are useful as resilience measures in the workplace. The available resilience questionnaires are all one-dimensional, assessing either individual or social resources, ignoring the study of the contribution of joint resources. Therefore, we decided to develop a questionnaire that aims to fill up this gap.

The organizational level

Considering the characteristics of the work environment, resilient organizations are those that provide the workers with the necessary resources in order to perceive the stressful events as less threatening, allowing energies

Conclusioni: ORA-Q è uno strumento valido e affidabile per le indagini nei luoghi di lavoro, ed è a tutt'oggi l'unico strumento disponibile per la rilevazione dei livelli di resilienza in ambito organizzativo. Il questionario sembra completo e include le più rilevanti risorse di resilienza identificate in letteratura. La sua struttura a tre livelli lo rende funzionale ai fini della sorveglianza, dell'analisi comparativa e della valutazione di interventi promozionali.

Parole chiave: occupational health, resilienza, distress, questionario.

to be redirected from minimizing stress to focusing on opportunities for growth (7).

Particularly, resilient organizations (a) support workers' needs for influence and skill discretion (8), (b) enable workers to perceive their tasks as purposeful and meaningful (4), (c) increase workers sense of belongingness to their organization, that enhance their resilience (4), and (d) promote sustainability, that is the workers capacity to pursue aims that give satisfactory work life course under stress conditions (4).

The occupational level

Considering workers' characteristics, most resilient workers appear to possess a cognitive flexibility (9-11) that refers to a person's (a) sense of power – the awareness that in any given situation there are available options and alternatives –, (b) the willingness to be flexible and to adapt to the situation –, and (c) self-efficacy in being flexible – the perception of effectiveness in the adaptive processes (12). Numerous researches demonstrated that flexibility leads to healthier outcomes (13). Another resource of this level of resilience is the agency disposition, that refers to the volition to self-organize experience and behaviour and to have activity to be concordant with one's integrated sense of self (14). The agency is essential for health and well-being of all individuals regardless of culture (15) and in the workplace it is connected to the subjective perception of having a meaningful job.

The personal level

Considering the characteristics of resilient people a number of different personality-based coping behaviours have been associated with resilient outcomes (4). Nevertheless many researches demonstrated that the common denominator to explain this ability to cope well with

stressful conditions is the sense of coherence (SOC). It is a dispositional orientation, conceptualized as a unitary construct, having three components: (a) the sense that stimuli are predictable and structured (comprehensibility), (b) the sense that available resources (whether one's own or another's) are adequate to deal with demands from the stimuli (manageability), (c) the sense that demands have significance and are worthy of investment (meaningfulness) (16). To date the SOC questionnaire has been used in different contexts by multiple scientific disciplines like medicine, psychology, public health, sociology, social work, and pedagogy, highlighting the usefulness of this construct as a resilience asset (17).

Aims

The main aim of the present work was to develop a *three-level instrument*: organizational, occupational and personal resilience assets. This structure achieves the following objectives: (a) to develop valid and relevant instruments for the assessment of resilience assets at work, (b) to make national and international comparison possible, (c) to facilitate surveillance and benchmarking, (d) to improve evaluation of interventions. Furthermore, the study intends to test the concurrent validity of all three levels of resilience assets in buffering job demand and psychological distress.

In summary, the occupational resilience assets questionnaire (ORA-Q) covers some of the main components of resilience in the workplace. It was developed on the basis of the following basic principles and theoretical considerations: (a) the questionnaire should be theory-based, but not attached to one specific theory, (b) the questionnaire should consist of dimensions related to different levels of analysis (organizational, occupational, and individual), (c) the questionnaire should be general, meaning that it should be applicable in all sectors of the labour market, (d) the questionnaire should be *user friendly* with regard to work environment, professionals and respondents (employees), (e) the questionnaire should be effective for epidemiological researches. Table I gives an overview of the structure of the questionnaire.

Method

Measures

Organizational Resilience. Four *ad hoc* questionnaires have been set up.

Table I. Main scheme for the development of the Occupational Resilience Assets Questionnaire (ORA-Q)

Levels	Scales	Sample questions
Organizational Resilience	1. Influence	I can decide how to manage autonomously the operating conditions of my work
	2. Sustainability	I feel a participant in the problems of my organization
	3. Meaningful Work	I consider my work to be important
	4. Belongingness	There is a good atmosphere between my colleagues and I
Occupational Resilience	1. Agency	I am an active person in carrying out the job related plans I set for myself
	2. Sense of Power	If I think about my work life, it seems to me that my possibilities have been growing
	3. Effective Flexibility	In your work activities, how much can you identify alternative solutions to problems?
Personal Resilience	Dispositional Coherence	Do you have the feeling that you are in an unfamiliar situation and don't know what to do?
		Has it happened that people whom you counted on disappointed you?
		Do you have feeling that you don't really care about what goes on around you?

Influence was measured by a 6-item scale developed from Karasek's model (18). The scale range was from 1= *never* to 5= *always*. In the present study, the internal consistency of the scale was good ($\alpha = .84$).

Sustainability was measured by a 6-item scale developed from the Adaptive Management Model (19). Respondents answered on a scale ranging from 1= *never* to 5= *always*. In the present study, the internal consistency of the scale was good ($\alpha = .81$).

Meaningful work was measured by a 3-item scale developed from Park's Meaning Making Model (20). The scale range was from 1= *not at all* to 5= *through and through*. In the present study, the internal consistency of the scale was good ($\alpha = .87$).

Belongingness was measured by a 3-item scale developed from Norris' Social Capital Model (21). The scale range was from 1= *never* to 5= *always*. In the present study, the internal consistency of the scale was good ($\alpha = .76$).

Occupational Resilience. Three *ad hoc* questionnaires have been set up.

Agency was measured by a 7-item scale developed from Deci and Ryan's self-determination theory (15). Respondents answered on a scale ranging from 1= *I disagree* to 6= *I perfectly agree*. In the present study, the internal consistency of the scale was good ($\alpha = .74$).

Sense of power was assessed by a 6-item scale constructed from the self-empowerment process proposed by Brusciaglioni and Gheno (22). The scale range was from 1= *I extremely disagree* to 7= *I extremely agree*. In the present study, the internal consistency of the scale was good ($\alpha = .75$).

Effective flexibility was measured by a 4-item scale developed from Bandura's Social-Cognitive Theory (23). Respondents answered on a scale ranging from 1= *not at all* to 5= *very much*. In the present study, the internal consistency of the scale was good ($\alpha = .75$).

Personal Resilience. It was assessed by the original short 13-item version of the Sense of Coherence Scale, proposed by Antonovsky (24). Respondents were asked to select a response on a 7 Likert scale with two anchoring phrases. Consistent with Eriksson's and Lindstrom's systematic review (16) a principal component factor analysis with Varimax rotation was performed to test the construct validity. The results show a three factor solution excluding three of the original items (item 4 - until now your life has had: from 1= *no clear goals or purpose at all* to 7= *very clear goals and purpose*; item 11 - when something happened, have you generally found that: from 1= *you overestimated or underestimated its importance* to 7= *you saw things in the right proportion*; item 12 - how often do you have the feeling that there's little meaning in the things you do in your daily life? From 1= *very often* to 7= *very seldom or never*). The adapted version has six items on the comprehensibility and the manageability concept (i.e. do you have very mixed-up feelings and ideas? From 1= *very often* to 7= *very seldom or never*), two on social confidence (i.e. has it happened that people whom you counted on disappointed you?

From 1= *never happened* to 7= *always happened*) and two on meaningfulness (i.e. do you have the feeling that you don't really care about what goes on around you? From 1= *very seldom or never* to 7= *very often*). In the present study, the internal consistency of the scale was good ($\alpha = .80$).

The concurrent validity

Job demands. They were assessed by a 5-item scale developed from the COPSOQ's (25) job demands scale. The scale measures quantitative (2 items), cognitive (1 item), emotional (1 item) and sensorial (1 item) demands. The scale range was from 1= *never* to 5= *always*. The measure used in this sample was bi-dimensional as suggested by an exploratory principal components factor analysis with Varimax rotation, that showed two factors: qualitative demands (3 items: cognitive, emotional, sensorial demands) and quantitative demands (2 items), respectively accounting for 39% and 22% of variance. The qualitative demands showed a moderate internal consistency ($\alpha = .69$).

Stress. It was assessed by the Italian 12-item version of the General Health Questionnaire (26). This is a measure of health focusing mainly on anxiety and depression, which is normally used in general practice settings. Respondents answered on a scale ranging from 1= *no* to 4= *much more than usual*. Data was scored by Politi's (26) binomial method (0-0-1-1). The Italian cut-off score of 5 has been used to classify subjects in condition of distress. In the present study, the internal consistency of the scale was good ($\alpha = .85$).

Study population and methods

In 2011, workers undergoing a national study on the psychosocial work environment under the responsibility of the first author of this paper, were asked to complete a written self-report questionnaire composed of three sections: 1) basic socio-demographic informations, 2) occupational resilience assets, 3) general health. Names and addresses were provided by the Italian Labour Union Confederation. The data was collected by many professionals in all Italian regions to recruit a labour market stratified representative sample.

Sample. Overall 1,518 subjects completed the ORA questionnaire. The participants were almost equally divided between male (44%) and female (56%). The majority of them (78%) were 18-35 years old, 15% were 36-45 years old and 7% were 46-55 years old. Participants came evenly from all Italian regions: 40% worked in the North, 28% in the Centre, and 32% in the South of Italy. The questionnaire was offered to all workers from several companies belonging to 8 different sectors of the labour market: industry (26%), construction (4%), trade (18%), social services (30%), education system (4%), university and research (3%), public system (2%), other (13%).

Statistical Analysis. First of all, the normality of all variables has been tested by univariate skewness and kurtosis index. Consistently with Marcoulides and Hersherberger (27), measures with both skewness and kurtosis index ranging from 1 to -1 has been accepted as normally distributed. All the ORA-Q scales were normally distributed. Three exploratory factor analyses, with principal component extraction and Varimax rotation method with Kaiser normalization, were performed to test the psychometric characteristics of the new Occupational Resilience Assets Questionnaire. In the factor analyses, weak loadings and cross-loadings on other scales were looked for. Items with cross-loadings above 0.30 or with loadings less than 0.50 were excluded. With regard to the internal reliability, inter-item correlations and Cronbach's alpha statistic were analysed. The concurrent validity of each resilience subscale was examined by logistic regression analyses. General linear models (GLM) were performed to examine the association of workers' demographic and occupational characteristics with all the resilience assets. A medium eta-squared ($\eta^2 > .06$) was used as rule of thumb (28). The results of GLM indicated no significant ($\eta^2 > .06$) differences in resilience assets associated with gender, age, education, and sectors of the labour market. The version 17 of SPSS for Windows was used for all the statistical analyses.

Results

Psychometric Properties

Organizational Resilience. The factor analysis identified four factors that accounted for 61% of the total variance. After rotation, each factor was seen to correspond to a specific construct, as hypothesized (Table II). The first

factor corresponded to the *influence scale*, the second one to the *sustainability scale*, the third one to the *meaningful work scale* and the last factor to the *belongingness scale*. Items all loaded most highly (>.50) on the expected factor and weakly (<.30) on the other factors. Using factor analysis, four scales have been computed (influence, sustainability, meaningful work, belongingness). The internal reliability (coefficient alpha) were 0.84 for influence, 0.75 for sustainability, 0.87 for meaningful work and 0.77 for belongingness. Corrected item-total correlation coefficients varied between 0.45 and 0.76 and were all above the threshold of 0.30 (29), indicating good consistency between items defining the respective scales.

Occupational Resilience. The factor analysis identified three factors that accounted for 48% of the total variance. After rotation, each factor was seen to correspond to a specific construct, as hypothesized (Table III). The first factor corresponded to the *agency scale*, the second one to the *sense of power scale*, and the last factor to the *effective flexibility scale*. Items all loaded most highly (>.50) on the expected factor and weakly (<.30) on the other factors. Using factor analysis, three scales have been computed (agency, sense of power, effective flexibility). The internal reliability (coefficient alpha) were 0.74 for agency, 0.75 both for sense of power and effective flexibility. Corrected item-total correlation coefficients varied between 0.35 and 0.58 and were all above the threshold of 0.30 (29), indicating good consistency between items defining the respective scales.

Personal Resilience. The factor analysis identified three factors that accounted for 59% of the total variance. After rotation, each factor was seen to correspond to a specific construct (Table IV). The first factor corresponded to the *comprehensibility scale*, the second one to the *social*

Table II. Principal component analysis of Organizational Resilience items with Varimax rotation of factor loadings

Items	Mean (DS)	Components				Item-total correlation coefficient (corrected)
		1	2	3	4	
Organizational Resilience						
I can decide how to manage autonomously the operating conditions of my work	3.00(1.20)	.78	-.06	.14	.18	.69
I have a say in choosing what to work on	2.53(1.20)	.77	.10	.16	.12	.67
I can decide autonomously the time table of my work	2.89(1.22)	.76	-.08	.10	.09	.64
I have a say in choosing who works with me	2.24(1.22)	.75	.21	-.04	.06	.60
If I have some private commitments, I am allowed to leave work for a few hours	2.92(1.29)	.69	-.09	.04	.18	.57
I have influence on the amount of work assigned to me	2.55(1.17)	.66	.08	.06	.05	.53
I feel a participant in the problems of my organization	3.27(1.04)	.14	.74	.11	-.05	.59
The aims of my organization are clear and well-defined	3.47(98)	-.15	.73	.10	.02	.56
Given the commitment and achievements in my work, I get the right recognition from my organization	3.04(1.02)	.17	.67	-.06	.29	.51
At my workplace, I feel to be well informed concerning new things, important decisions, changes or plans for the future	3.40(1.08)	-.00	.64	.09	-.02	.46
I have a strong feeling of belonging to my organization	3.19(1.06)	.05	.64	.15	.02	.47
I receive all the necessary information to carry out my work properly	3.57(.85)	-.06	.53	.16	.33	.45
I consider my work to be important	3.66(.91)	.14	.16	.87	.10	.76
I consider my work to be useful	3.63(.92)	.10	.15	.86	.16	.75
I consider my work to be meaningful	3.69(.93)	.13	.19	.81	.22	.72
There is a good atmosphere between my colleagues and I	3.57(.94)	.23	.00	.17	.83	.68
There is good co-operation between my colleagues and I	3.59(1.00)	.30	-.02	.19	.75	.62
I feel that I am part of a team in my workplace	3.39(1.02)	.09	.35	.13	.71	.54
Construct		Influence	Sustainability	Meaningful work	Belongingness	
% of variance explained by the scale		28%	16%	10%	7%	
Reliability (Cronbach's alpha)		.84	.81	.87	.76	

Table III. Principal component analysis of Occupational Resilience items with Varimax rotation of factor loadings

Items	Mean (DS)	1	Components 2	3	Item-total correlation coefficient (corrected)
Occupational Resilience					
I am an active person in carrying out the job related plans I set for myself	4.56(1.26)	.74	.13	.03	.57
As time goes by, I have developed a strong ability to understand the job and it has made me stronger and more capable	4.81(1.11)	.68	-.11	.12	.51
I am good at juggling my working time so that I can fit everything in that needs to get done	4.52(1.26)	.66	.09	.23	.46
*When I try to organize my daily work activities, I feel a sense of frustration because I'm never able to finish the tasks I'm supposed to do	4.62(1.45)	.65	.16	.01	.49
Some people work aimlessly, but I am not one of them	4.80(1.31)	.64	-.07	.15	.48
*I don't have a good sense of what it is I am trying to accomplish in life at work	4.41(1.50)	.53	.14	-.23	.41
*I gave up trying to make big improvements or changes in my work life a long time ago	4.51(1.57)	.52	.21	.07	.35
If I think about my work life, it seems to me that my possibilities have been growing	4.38(1.59)	.04	.74	-.04	.55
I usually have several options to choose from	4.05(1.52)	.06	.70	-.06	.53
Generally, I seem to leave my mark on what I do at work	4.75(1.51)	.23	.67	.15	.55
Generally, I feel I have a lot of influence on what happens to me at work	4.42(1.45)	.06	.64	.14	.49
We live in a world full of possibilities, also at work	3.50(1.80)	-.11	.62	.18	.43
Generally, I seem to achieve something good with my work	5.22(1.38)	.26	.51	.05	.40
In your work activities, how much can you identify alternative solutions to problems?	3.61(.76)	.03	.12	.75	.58
In your work activities, how much can you manage emergencies and unforeseen events?	3.60(.73)	-.09	.07	.74	.51
In your work activities, how much can you keep in sight the attainment of objectives even in moments of great difficulty?	3.64(.70)	.27	.08	.72	.57
In your work activities, how much can you take full advantage of the experience of others?	3.53(.83)	.16	.07	.71	.52
Construct		Agency	Sense of Power	Effective Flexibility	
% of variance explained by the scale		23%	13%	12%	
Reliability (Cronbach's alpha)		.74	.75	.75	

* Reverse

Table IV. Principal component analysis of Personal Resilience items with Varimax rotation of factor loadings

Items	Mean (DS)	1	Components 2	3	Item-total correlation coefficient (corrected)
Personal Resilience					
Do you have very mixed-up feelings and ideas?(1=Very often; 7=Very seldom or never)(8)^	5.21(1.60)	.77	-.00	.11	.53
Do you have the feeling that you are in an unfamiliar situation and don't know what to do?(1=Very often; 7=Very seldom or never)(6)^	4.94(1.64)	.70	.00	.20	.58
Does it happen that you have feelings inside you would rather not feel?(1=Very often; 7=Very seldom or never)(9)^	4.55(1.70)	.66	.24	.08	.53
How often do you have feelings that you're not sure you can keep under control?(1=Very often; 7=Very seldom or never)(13)^	4.99(1.56)	.65	.19	.24	.56
Do you have the feeling that you're being treated unfairly?(1=Very often; 7=Very seldom or never)(5)^	4.68(1.62)	.61	.19	-.03	.44
*Many people - even those with a strong character - sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?(1=Never; 7=Very often)(10)^	4.56(1.48)	.54	.17	.30	.48
*Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?(1=Never happened; 7=Always happened)(2)^	3.50(1.35)	.13	.89	.15	
*Has it happened that people whom you counted on disappointed you?(1=Never happened; 7=Always happened)(3)^	3.62(1.42)	.21	.88	.07	
*Doing the things you do every day is:(1= a source of deep pleasure and satisfaction; 7= a source of pain and boredom)(7)^	4.58(1.44)	.14	.02	.80	
*Do you have the feeling that you don't really care about what goes on around you? (1=Very seldom or never; 7=Very often)(1)^	5.28(1.60)	.17	.17	.73	
Construct		Comprehensibility	Social Confidence	Meaningfulness	
% of variance explained by the scale		36%	13%	10%	
Reliability (Cronbach's alpha)		.77			

* Reverse

^ Original 13-item short version number

confidence scale, and the last factor to the meaningfulness scale. Items all loaded most highly (>.50) on the expected factor and weakly (<.30) on the other factors. Using factor analysis, three scales have been computed (comprehensibility, social confidence, meaningfulness) and the internal consistency of the comprehensibility scale has been calculated. The internal reliability (coefficient alpha) was 0.77. Corrected item-total correlation coefficients varied between 0.44 and 0.58 and were all above the threshold of 0.30 (29) indicating good consistency between items defining the comprehensibility scale. Starting from the

theoretical assumptions of the salutogenic model (16), a dispositional coherence scale weighted for the explained variance of the three subscales has been constructed.

Associations with Stress

Consistent with the aim of the present study, logistic regression analyses were performed to test both the single and the combined contribution of each level (organizational, occupational and personal) of resilience resources considered as stress buffer.

Organizational Resilience. Results highlighted that higher scores on *sustainability* decreased the probability of reporting high psychological distress (OR = 0.71, 95% CI 0.62-0.82), a similar effect was revealed for both *meaningful work* (OR = 0.83, 95% CI 0.72-0.95) and *belongingness* (OR = 0.88, 95% CI 0.77-1.01). On the contrary, *influence* did not reveal an association with psychological distress. When the combined contribution was tested, only *sustainability* maintained a negative association with psychological distress (OR = 0.73, 95% CI 0.63-0.84).

Occupational Resilience. Results showed that higher scores on *agency* decreased the probability of reporting high psychological distress (OR = 0.66, 95% CI 0.57-0.77), the same effect has been revealed for both *sense of power* (OR = 0.84, 95% CI 0.72-0.97) and *effective flexibility* (OR = 0.81, 95% CI 0.69-0.95). All the three occupational resilience resources maintained their stress-buffering role even when corrected for their combined contribution (Table V).

Personal Resilience. Results highlighted that higher scores on *dispositional coherence* decreased the probability of reporting high psychological distress (OR = 0.54, 95% CI 0.47-0.61).

Resilience-Demands Interaction and Associations with Stress

Starting from the crucial role that job-demand plays in the most important model on work stress (8, 18, 30) three different logistic regressions were performed to test the

role of each resilience resource on stress after adjusting for job-demands. Secondly, the interaction effect among – organizational, occupational and personal – resilience and job-demands were tested by a discrepancy interaction term (31). For this aim, the total scores of organizational, occupational and job-demands dimensions have been calculated. All total scores have been weighted for the explained variance of each subscale.

Organizational Resilience-Demands Interaction. Results highlighted that higher scores on the *sustainability*, and on the *meaningful work* resources decreased the probability of reporting high psychological distress even after job-demands correction (Table V). The logistic regression, with organizational resilience, job-demands and organizational resilience/demands interaction as independent variables, showed the crucial role of the interaction term in decreasing the probability of reporting high psychological distress (OR = 0.73, 95% CI 0.68-0.79). That is, the probability of experiencing psychological distress increases only when organizational resilience resources are lower than job-demands.

Occupational Resilience-Demands Interaction. Analyses highlighted that higher scores on the *agency*, *sense of power* and *effective flexibility* resources decreased the probability of reporting high psychological distress even after job-demands correction (Table V). The logistic regression, with occupational resilience, job-demands and occupational resilience/demands interaction as independent variables, showed the crucial role of the interaction term in decreasing the probability of reporting high psychological

Table V. Association of resilience resources with distress (logistic regression analyses) (Odds ratios and 95% confidence intervals - CI)

Distress	Unadjusted		Adjusted for Job-Demands		Interaction	
	Singular direct effect Odds Ratio	95% CI	Combined direct effect Odds Ratio	95% CI	Odds Ratio	95% CI
Job-Demands						
Qualitative Demands	1.19**	1.04-1.36	1.19**	1.04-1.37		
Quantitative Demands	1.51***	1.29-1.77	1.49***	1.27-1.74		
Organizational Resilience						
Sustainability	0.71***	0.62-0.82	0.73***	0.63-0.84	0.77***	0.68-0.89
Meaningful Work	0.83**	0.72-0.95	0.89	0.77-1.02	0.74***	0.62-0.87
Belongingness	0.88*	0.77-1.01	0.92	0.78-1.05	-	-
Influence	-	-				
<i>Quantitative Demands</i>					1.38***	1.19-1.61
<i>Qualitative Demands</i>					1.41***	1.19-1.67
Organizational Resilience- Job-Demands						0.73*** 0.68-0.79
Occupational Resilience						
Agency	0.66***	0.57-0.78	0.67***	0.57-0.78	0.70***	0.59-0.83
Sense of Power	0.84*	0.72-0.97	0.84*	0.72-0.97	0.78**	0.66-0.91
Effective Flexibility	0.81**	0.69-0.95	0.81**	0.69-0.95	0.72***	0.61-0.86
<i>Quantitative Demands</i>					1.24**	1.07-1.44
<i>Qualitative Demands</i>					1.42***	1.19-1.69
Occupational Resilience- Job-Demands						0.72*** 0.66-0.78
Personal Resilience						
Dispositional Coherence	0.54***	0.47-0.61			0.55*	0.48-0.62
<i>Qualitative Demands</i>					1.22*	1.03-1.44
<i>Quantitative Demands</i>					1.25**	1.06-1.46
Personal Resilience- Job-Demands						0.77*** 0.69-0.89

* Significant at p < .05
 ** Significant at p < .01
 *** Significant at p < .001

distress (OR = 0.72, 95% CI 0.66-0.78). That is, the probability of experiencing psychological distress increases only when the occupational resilience resources are lower than job-demands.

Personal Resilience-Demands Interaction. Results showed that scoring high on the *dispositional coherence* resource decreased the probability of reporting high psychological distress even after job-demands correction (Table V). Further the logistic regression with dispositional coherence, job-demands and dispositional coherence/demands interaction as independent variables highlighted the crucial role of the interaction term in decreasing the probability of reporting high psychological distress (OR = 0.77, 95% CI 0.67-0.89). That is, the probability of experiencing psychological distress increases only when the dispositional coherence is lower than job-demands.

Discussion

The purpose of our paper is to present the ORA questionnaire and to discuss its special features, its strengths and weaknesses. To our knowledge the ORA questionnaire is unique in the following ways: (a) the ORA-Q consists of a three-level questionnaire with different lengths and complexity, (b) the ORA-Q is a questionnaire aiming at describing the more relevant resilience resources in the workplace, (c) the ORA-Q aims to make national and international comparison possible, (d) the ORA-Q wants to facilitate health surveillance and benchmarking.

The data show satisfactory internal consistency of all questionnaire scales, and, further, exploratory factor analyses support the conceptual distinction between the different resilience resources considered. Consistent with the definition of resilience proposed, the associations of all resilience resources with psychological distress have been tested.

The data show the relevance of all levels of resilience resources (i.e. organizational, occupational, and personal) in preventing distress. This evidence is relevant for the hypothesis of a new resilience index to be used in the field of occupational health. Results highlight the relevant interaction between resilience resources and job-demands. Organizational, occupational, and personal resilience seem to represent a standard by which job-demands could be compared to enable an effective assessment of psychosocial risk in work organizations as well as for occupational health surveillance. Further, the specific characteristics of this questionnaire make it useful even for interventions on human resources aiming to develop an adaptive management that uses challenges as an opportunity to build capacity and that can prosper when the unexpected happens.

The three levels assessed by the questionnaire correspond to three autonomous dimensions; therefore, the questionnaire has a modular nature which allows it to respond to different purposes of inquiries: when considering organizational design, the unique organizational level of the questionnaire may significantly contribute to the assessment of organizational sustainability; the occupational level is most effective in the assessment and the im-

provement of the psychosocial work environment; the personal level plays a crucial role in health surveillance.

In addition, the ORA questionnaire provides a useful tool for epidemiological studies in the workplace representing a reliable and cost effective instrument.

However, there are obvious limitations to this study. Both resilience resources and health related questions are based on subjective evaluations. Further, the cross-sectional study design impedes any inference to causal directions of observed statistical associations. However, the majority of the resilience resources selected showed their effectiveness in promoting and protecting health in stressful situations (32-34). All in all, we find it reasonable to conclude that the goals described in the background section have been achieved. Resilience, actually, is an asset for the organization and for occupational health as it involves the ability to adapt creatively and constructively to change, and change is the one constant in nowadays organizational life.

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APPENDIX

Occupational Resilience Assets Questionnaire (ORA-Q) Italian Version

“Di seguito sono riportate alcune domande e affermazioni che riguardano sia la Sua vita in generale sia aspetti più legati alla sfera lavorativa; rispetto a ciascuna di esse Le chiediamo di esprimere un giudizio utilizzando la scala di risposta riportata.”

Livello organizzativo
<i>Influenza (1=mai; 5=sempre)</i>
Posso decidere autonomamente le modalità di svolgimento del mio lavoro
Ho voce in capitolo nello scegliere su che cosa lavorare
Posso decidere autonomamente i tempi di svolgimento del mio lavoro
Ho voce in capitolo nello scegliere con chi lavorare
Se ho qualche impegno privato mi è concesso di lasciare il mio posto di lavoro per qualche ora
Ho influenza sulla quantità di lavoro che mi viene assegnata
<i>Sostenibilità (1=mai; 5=sempre)</i>
Mi sento partecipe dei problemi della mia organizzazione
Gli obiettivi della mia organizzazione sono chiari e ben definiti
Considerati l'impegno e i risultati raggiunti, ottengo il giusto riconoscimento dalla mia organizzazione
Nel mio posto di lavoro, ritengo di essere bene informata/o delle novità, delle decisioni importanti, dei cambiamenti o piani per il futuro
Sento un forte senso di appartenenza alla mia organizzazione
Ricevo tutte le informazioni necessarie per svolgere correttamente il mio lavoro
<i>Significato del lavoro (1=per niente; 5=del tutto)</i>
Ritengo che il lavoro che faccio sia importante
Ritengo che il lavoro che faccio sia utile
Ritengo che il lavoro che faccio abbia senso
<i>Senso di appartenenza (1=mai; 5=sempre)</i>
C'è una buona atmosfera tra me e i miei colleghi
C'è una buona collaborazione tra me e i miei colleghi
Sento di far parte di un gruppo nel mio posto di lavoro

Livello occupazionale
Agency (1=non sono d'accordo; 6=sono perfettamente d'accordo)
Ho un senso di direzione e dei propositi nella mia vita professionale
Col trascorrere de tempo ho sviluppato una notevole capacità di comprendere la vita professionale e ciò mi ha reso più forte e più capace
Sono brava/o nel gestire il mio tempo lavorativo così che riesco a sistemare tutte le cose che devono essere fatte
*Quando tento di organizzare la mia attività lavorativa quotidiana, finisco col provare un senso di frustrazione perché non riesco mai a portare a termine le cose che mi propongo di fare
Alcune persone lavorano senza porsi alcun obiettivo, ma io non sono una di quelle
*Non ho chiaro ciò che sto cercando di realizzare nel mio lavoro
*Ho rinunciato a perseguire grandi miglioramenti o cambiamenti nella mia attività professionale già da molto tempo
Sentimento di potere (1=del tutto in disaccordo; 7=del tutto d'accordo)
Se penso alla mia vita professionale, mi sembra che le mie possibilità siano aumentate
Generalmente ritengo di avere diverse possibilità tra cui scegliere
Generalmente mi sembra di incidere in ciò che faccio sul lavoro
Generalmente sento di avere molta influenza su ciò che mi accade nel lavoro
Viviamo in un mondo ricco di possibilità anche professionali
Generalmente mi sembra di realizzare qualcosa di buono con il mio lavoro
Flessibilità funzionale (1=per niente; 5=molto)
Nella sua attività lavorativa quanto si ritiene capace di individuare soluzioni alternative di fronte ai problemi?
Nella sua attività lavorativa quanto si ritiene capace di gestire le emergenze e gli imprevisti?
Nella sua attività lavorativa quanto si ritiene capace di mirare al raggiungimento degli obiettivi anche nei momenti di maggior difficoltà?
Nella sua attività lavorativa quanto si ritiene capace di trarre il massimo vantaggio dall'esperienza altrui?

* Reverse

Livello personale
Coerenza disizionale
Ha sensazioni ed idee confuse e poco chiare? (1=molto spesso; 7=raramente o mai)
Ha la sensazione di trovarsi in situazioni poco familiari e non sapere cosa fare? (1=molto spesso; 7=raramente o mai)
Le succede di provare sentimenti che preferirebbe non provare? (1=molto spesso; 7=raramente o mai)
Quanto spesso prova sentimenti che non è sicura/o di riuscire a controllare? (1=molto spesso; 7=raramente o mai)
Ha la sensazione di essere trattata/o ingiustamente? (1=molto spesso; 7=raramente o mai)
*Molte persone, anche quelle con un carattere forte, si sentono come perdenti in certe situazioni. Quanto spesso in passato le è capitato di sentirsi così? (1=mai; 7=molto spesso)
*Le è successo in passato di rimanere sorpresa/o dal comportamento di persone che pensava di conoscere bene? (1=mai; 7=sempre)
*Le è capitato che persone su cui contava l'abbiano delusa/o? (1=mai; 7=sempre)
*Per lei fare le cose di tutti i giorni è occasione di: (1=piacere e soddisfazione; 7=sofferenza e noia)
*Ha la sensazione che non le importi quello che accade intorno a lei? (1=raramente o mai; 7=molto spesso)

* Reverse

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