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Reliability and validity of the English version of the New Brief Job Stress Questionnaire

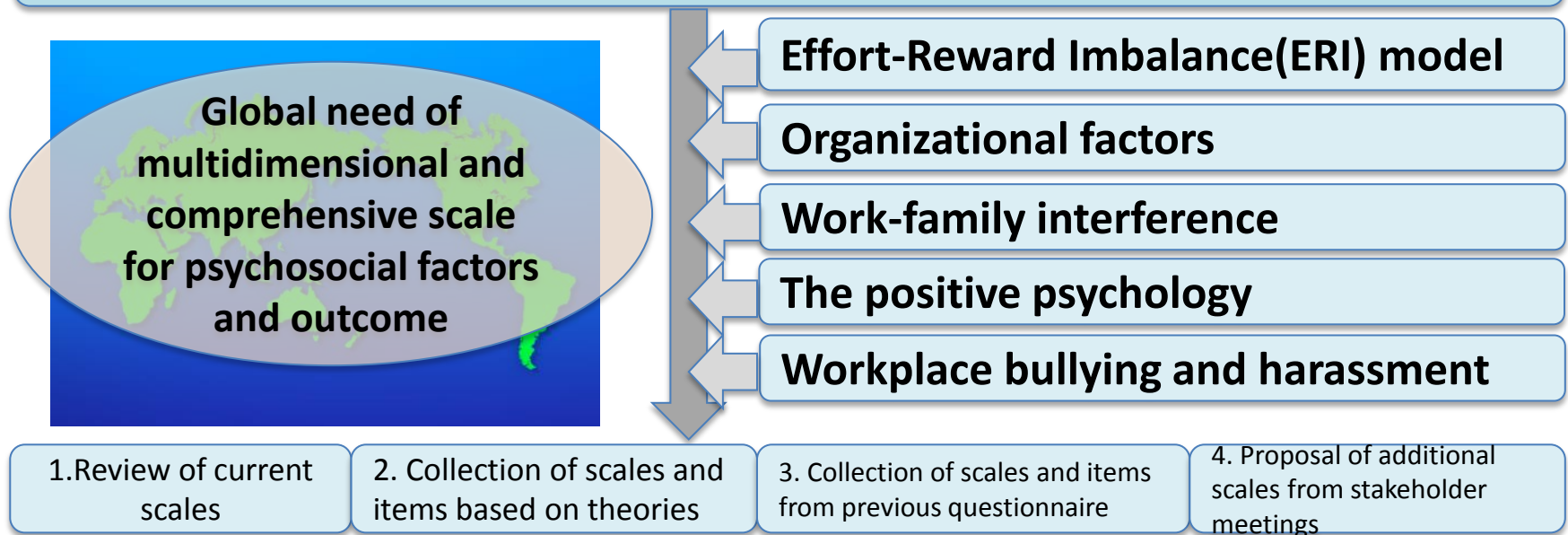
E. Ando¹, N. Kawakami¹, A. Shimazu¹,
T. Shimomitsu^{2,3}, Y. Odagiri³

1. Department of Mental health, Graduate School of Medicine, The University of Tokyo
2. Japan Health Promotion and Fitness Foundation
3. Department of Preventive Medicine and Public Health, Tokyo Medical University

Backgrounds: Development of The Brief Job Stress Questionnaire(the New BJSQ)

Inoue A, et al. *Industrial Health* (2014a, 2014b)

The Brief Job Stress Questionnaire (the BJSQ) (Shimomitsu T, et al. 2000)



The **New** Brief Job Stress Questionnaire (the New BJSQ)

(Inoue A, et al. 2014)

The purpose of this study:

To develop & test the reliability and validity of the **English** version of the New BJSQ

Backgrounds→Methods→Results→Discussion

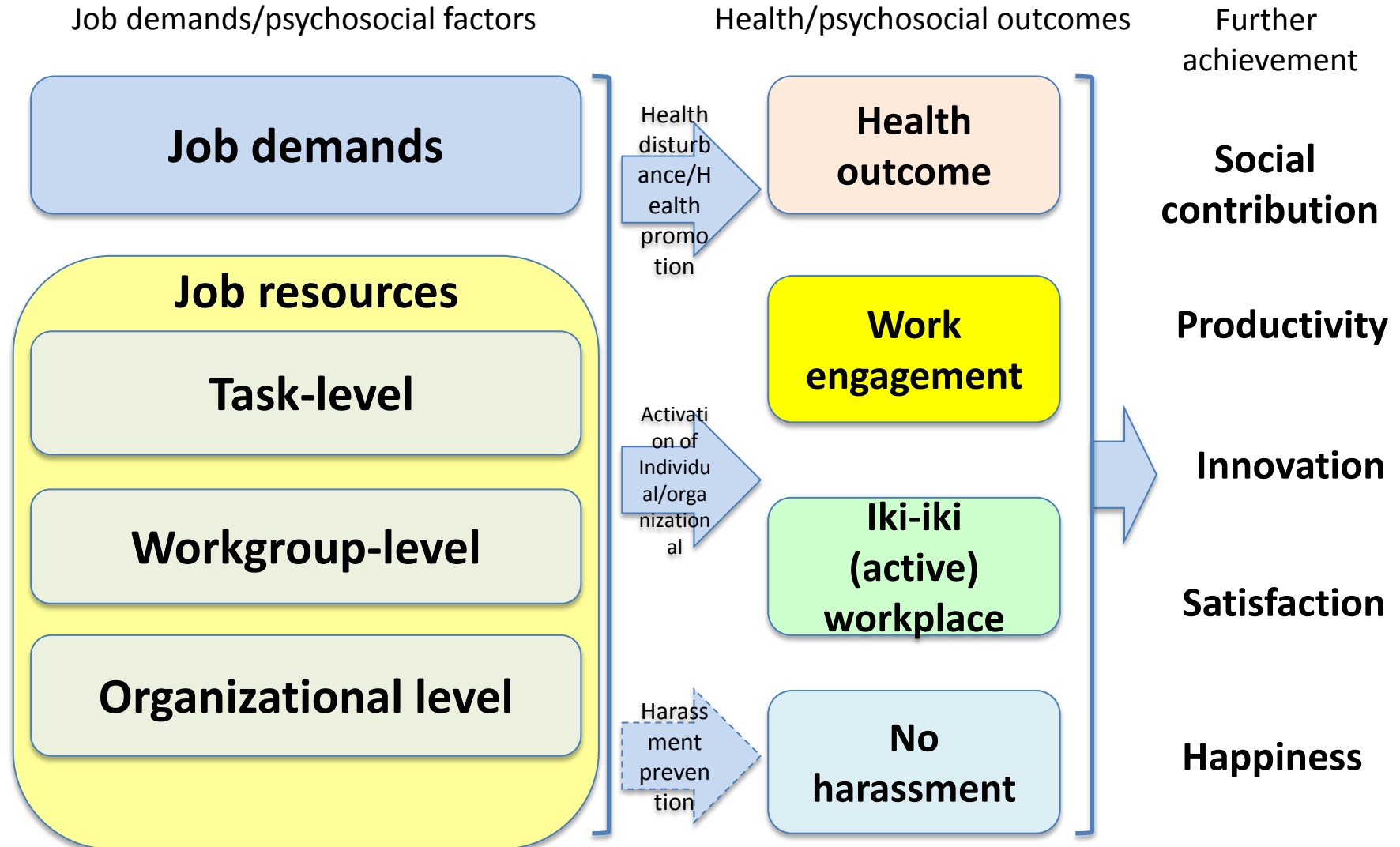
Methods :List of scales in the New BJSQ

Standard version: 49 scales (141 items) Short version: 42 scales (80 items)

Factors	Scales	Number of items		Factors	Scales	Number of items	
		Standard ver.	Short ver.			Standard ver.	Short ver.
Job demands				Job resources: organizational-level			
	1 Quantitative job overload	3	3	28	Trust with management	3	1
	2 Qualitative job overload	3	3	29	Preparedness for change	3	1
	3 Physical demands	1	1	30	Procedural justice	3	NA
	4 Interpersonal conflict	3	3	31	Respect for individuals	3	1
	5 Poor Physical environment	1	1	32	Fair personnel evaluation	3	1
	6 Emotional demands	3	1	33	Diversity	3	1
	7 Role conflict	3	1	34	Career development	5	1
	8 Work-self balance(negative)	2	1	35	Work-self balance(positive)	2	1
Job resources: task level				Outcomes			
	9 Job control	3	3	36	Vigor	3	3
	10 Suitable jobs	1	1	37	Anger-irritability	3	3
	11 Skill utilization	1	1	38	Fatigue	3	3
	12 Meaningfulness of work	3	1	39	Anxiety	3	3
	13 Role clarity	3	1	40	Depression	6	6
	14 Career opportunity	3	1	41	Physical stress reaction	11	11
	15 Novelty	3	NA	42	Job satisfaction	1	1
	16 Predictability	3	NA	43	[Satisfaction with family life]	1	1
Job resources: workgroup-level				44	Workplace harassment	2	1
	17 Supervisor support	3	3	45	Workplace social capital	3	1
	18 Coworker support	3	3	46	Work engagement	2	2
	19 [Support from family and friends]	3	3	47	Performance of a duty	3	NA
	20 Monetary/status reward	2	1	48	Realization of creativity	3	NA
	21 Esteem reward	2	1	49	Active learning	3	NA
	22 Job security	3	1				
	23 Leadership	3	1				
	24 Interactional justice	3	1				
	25 Workplace where people compliment each other	3	1				
	26 Workplace where mistakes are acceptable	2	1				
	27 Collective efficacy	3	NA				

Methods: Framework of the New BJSQ

Kawakami N, et al. 2012



Backgrounds → **Methods** → Results → Discussion

Methods: Scale development protocol

Step 1: Translation(Japanese → English)

Step 2: Back translation(E→J) & Finalization

Step 3: Ethical approval @Utokyo(10003-(3))

Step 4: Internet survey in the US(2013 Feb.)

Step 5: Statistical analyses

Reliability: Internal consistency reliability(Cronbach's α)

Validity: Principal component analysis and explanatory factor analysis of scales for Job demands and Job resources.

Methods: Demographic data of samples

Inclusion criteria:

- 1: Be a native English speaker
- 2: Was working during the survey period

Internet Survey in the US (N=311)

Sex	Men=170 Women=141
Age	20s: 23.5% 30s: 25.1% 40s: 27.0%
Race	White: 83.6%
Occupation	Private company employees: 70.0%
Employment Contract	Full-time: 84.6%

Results: Internal consistency of scales

- Cronbach's alpha coefficient of each scale showed sufficient value ($\alpha=0.70-0.94$)

Relatively lower coefficient scales ($\alpha=0.59-0.65$) :

“Interpersonal conflict”

“Role clarity”

“Economics/status reward”

“Stability rewards”

“ Reward esteem”

Results: Validity of Questionnaire

- In principal component analysis, contribution ratios of the first principal component of each scale were sufficiently high (52.2-91.1%)
- In factor analysis with varimax rotation, extracted five factors in standard version and six factors in short version regarding the Job demands and Job resources factors in the New BJSQ, respectively.
(cf. 4 factors in the Japanese version)

Discussion

Reliability of each scale

- Cronbach's alpha coefficients of nearly all scales showed high values ($\alpha=0.70-0.94$)
⇒ Sufficient internal consistency.

Validity of grouping of job demands/job resources

- Contribution ratio of principal component among nearly all scales were also high (52.2~91.1%).
⇒ Sufficient factorial validity.
- Five factors in standard ver. and six factors in short ver. were confirmed respectively
⇒ Some cultural differences between Japan and the US?
cf.) Four factors in original version of the New BJSQ

Limitation

- Two items from “Meaningfulness of job” were dropped in the internet survey.
⇒ Supplementary survey confirmed that internal consistency was acceptable.

Conclusion

- This study demonstrated an acceptable level of reliability and a partly satisfactory level of validity of the New BJSQ – the English version among workers in the US.
- Some culture related differences in the concept of job-demand and job-resources may be implied between two countries, thus the questionnaire may be useful for a cross-country comparison of job stress.

Acknowledgement

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