The Chinese version of the Goal Content for Weight Maintenance Scale (GCWMS) among young adults: Psychometric properties and its associations with weight status and disordered eating

Tianxiang Cui, Jiaxuan Xi, Chanyuan Tang, Jianwen Song, Jinbo He
School of Humanities and Social Science, The Chinese University of Hong Kong, Shenzhen
Email address: tianxiangcui@link.cuhk.edu.cn; hejinbo@cuhk.edu.cn

Introduction

- Goal content theory (GCT; Deci & Ryan, 2008, 2012): to explore the relationship between content of behavioral goals and different results that influence well-being and behavior.
- Behavioral goals: intrinsic goals (show natural desires for growth and are more likely to satisfy psychological needs) and extrinsic goals (emphasize obtaining rewards and positive reactions of others, and are not related to or might impair psychological need satisfaction).
- GCWMS (Encantado et al., 2021): measures goal content to clarify the relationships between goals, behavioral regulations, health behaviors and long-term psychological well-being.
- Aims: to translate the Goal Content for Weight Maintenance Scale into the Chinese version (C-GCWMS) and examine its psychometric properties among Chinese young adults; to test the invariance of C-GCWMS across sex, the relationship between goal contents and BMI, and the relationship between goal contents and eating disorders.

Methods

Sample: 1065 (78.8% are females) universities from Hunan province.

Measures:

GCWMS: see above.

REBS: asks the reason why regulate eating behavior and to which extent the items follow the reason.

EDE-QS: examines eating disorder symptomatology.

Data Analysis:

CFA, reliability tests of subscales from the C-GCWMS, and tests of convergent and divergent validity using R.

Results

		1	2	3	4	5	6	7	8	9	10	11	12
1. Health		1	.81***	.61***	.71***	.48***	.52***	.59***	.12***	-.05	-.26***	.08*	.09*
2. Challenge		.86***	1	.76***	.76***	.44***	.46***	.48***	.27***	-.01	-.19***	.11**	.24***
3. Social		.79***	.86***	1	.78***	.34***	.35***	.34***	.41***	.14***	-.05	.11**	.29***
4. Image		.85***	.83***	.87***	1	.32***	.32***	.47***	.29***	-.06	-.23***	.18***	.25***
5. Intrinsic motivation		.40***	.41***	.33***	.39***	1	.75***	.64***	.33***	.11**	-.14***	.02	.09*
6. Integrated regulation		.44***	.42***	.36***	.37***	.74***	1	.71***	.29***	.11**	-.22***	.04	.11**
7. Identified regulation		.56***	.42***	.37***	.48***	.61***	.77***	1	.16***	-.05	-.36***	.08*	.04
8. Introjected regulation		.10	.19**	.21**	.18**	.40***	.33***	.24***	1	.49***	.28***	.21***	.47***
9. External regulation		-.02	.003	.03	-.005	.18**	.14*	-.03	.55***	1	.48***	.06	.15***
10. Amotivation		-.14*	-.10	-.05	-.15*	-.18**	-.35***	-.38***	.16*	.40***	1	-.06	.05
11. BMI		.06	.16*	.17*	.10	.11	.10	.07	.31***	.17*	.04	1	.26***
12. Eating disorder		.001	.09	.10	.07	.06	-.01	.05	.33***	.13	.04	.21**	1
Male	*M*:	20.11	19.34	24.04	15.10	16.58	17.00	18.97	14.24	13.10	13.08	21.93	7.22
	SD:	4.33	4.59	5.67	3.37	4.42	4.42	4.38	4.39	4.43	4.24	3.73	7.34
Female	*M*:	20.68	19.90	24.17	15.89	17.10	17.37	19.90	14.38	11.87	12.16	20.17	7.93
	SD:	4.00	4.05	5.41	3.10	4.48	4.44	4.21	4.33	4.49	3.88	2.41	6.42

Note: Female's correlations are on the top diagonals, and male's correlations are on the bottom diagonals. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 1: Bivariate correlations between factors from C-GCWMS and other constructs.

	χ^2	*df*	*Δdf*	CFI	TLI	SRMR
Male	208.16***	57		0.942	0.920	0.037
Female	657.49***	57		0.926	0.899	0.060
Configural Model	865.65***	114		0.930	0.904	0.052
Metric Model	884.44***	123	9	0.929	0.910	0.054
Scalar Model	906.17***	132	9	0.928	0.915	0.055

Note: $^{***}p < .001$.

Table 2: Measurement invariance tests across sexes.

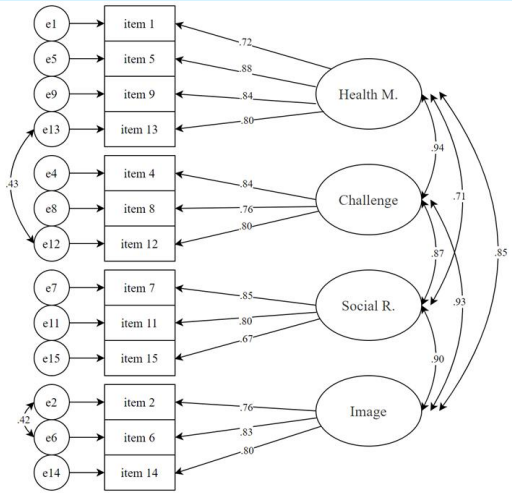

Figure 1: C-GCWMS model.

The four-dimensional structure of C-GCWMS was stable and was invariant across genders. The internal consistency reliabilities of four subscales were proved to be adequate according to Cronbach's α (.82-.88), and the construct validity was overall good.

There were significant latent mean differences on health management (*d* = .19) and image (*d* = .31), indicating that females had higher latent scores in these two factors. There were no significant gender differences on challenge (*d* = .14) and social recognition (*d* = -.004).

- In males, challenge (*r* = .16, *p* = .02) and social recognition (*r* = .17, *p* = .01) was significantly and positively correlated to BMI, while in females, health management, challenge, social recognition, and image showed significant and positive correlations with both BMI (*r* = .11, *p* = .03; *r* = .11, *p* = .002; *r* = .11, *p* = .002; *r* = .18, *p* < .001) and disordered eating behaviors (*r* = .11, *p* = .01; *r* = .24, *p* < .001; *r* = .29, *p* < .001; *r* = .25, *p* < .001).

Discussion

The C-GCWMS was psychometrically adequate for the sample of Chinese students. Goal content for weight management can be important contributors to individuals' weight status and disordered eating behaviors. However, the roles of goal content for weight management in weight status and disordered eating behaviors should be confirmed in future experimental and/or longitudinal studies.

Limitations: gender proportion is pretty imbalanced, with only some 20% of participants are males. Specific weight management items need to be discussed and developed. Qualitative methods including interviews should also be considered for scale improvement.

References

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Meeting Information

Please feel free to discuss with me via Tencent Meeting on Oct. 8th

Link: https://meeting.tencent.com/dm/9PrE0znaJd54

Meeting ID: 318 574 884