# Validation of the Chinese version of Relaxation Sensitivity Index

**Jieting Zhang, Christina M. Luberto, Qi Huang, Jin Kuang, Juan Zhong, Albert Yeung, Liye Zou***

## Introduction

- Mindfulness- and relaxation-based therapies have been reported to increase anxiety (i.e., relaxation-induced anxiety, RIA).

- Recently, Luberto and colleagues (2021) initially defined the term "relaxation sensitivity" as the fear of relaxation-related sensations involving three dimensions of fears induced by relaxation: fear of physical, cognitive events and negative social consequences.

- Furthermore, a 21-item self-reported scale called the Relaxation Sensitivity Index (RSI) was developed by Luberto and colleagues (2021).

- This study examined and validated the structure of the Chinese version of RSI and further explored its relationship with anxiety sensitivity and relaxation-induced anxiety.

## Methods

- In a preliminary study, the RSI was translated and revised into a Chinese version.

- In Study 1, the factor structure of the Chinese version RSI was explored among 597 Chinese college students (40.5 % males, $M_{age}$ = 20.24, $SD$ = 1.431) by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Internal consistency reliability was also examined.

- In Study 2, test-retest reliability, convergent validity, and predictive criterion validity of RSI were examined in a subset of participants from Study 1 ($N$ = 465, 37.6% males, $M_{age}$ = 20.15, $SD$ = 1.908).

## Results & Discussion

- Three factors (i.e., *Social appealing concerns*, *Social performance concerns*, and *Physical concerns*) were extracted based on the Chinese sample (see Table 1). *Cognitive concerns* factor was not retained, which may be due to the fact that mind and body is considered as the same object (i.e., "body-mind-connection") in Chinese culture.

Table 1 Factor loadings for the three-factor model

| Item | Factor | | |
|---|---|---|---|
| | F1 | F2 | F3 |
| 1. I worry that when I let my body relax, I will look unattractive. | **.944** | .008 | -.030 |
| 2. I fear that if my body is relaxed, I will not be socially appealing. | **.922** | -.058 | .001 |
| 3. I worry that when I let my body relax, people will make fun of me. | **.645** | -.008 | .185 |
| 4. I do not like to relax because it makes me feel out of contact with others. | **.536** | .091 | .251 |
| 5. I worry that if I don't stay busy, I will appear out of tune with others. | .095 | **.637** | .000 |
| 6. I fear that if I don't keep myself busy, I will be left behind. | -.003 | **.976** | -.167 |
| 7. I'm afraid that if I don't make enough effort in work or study, people will be unwilling to cooperate with me. | .133 | **.672** | .031 |
| 8. It scares me when my limbs feel heavy. | .035 | .048 | **.588** |
| 9. It frightens me to focus on my breathing. | .040 | -.154 | **.777** |
| 10. When my body feels as if it has been slowed down, I worry that there might be something terribly wrong with me. | .008 | .018 | **.770** |
| 11. It scares me when I am relaxing and I feel like I'm floating. | -.043 | .021 | **.763** |
| 12. I'm scared of doing relaxing activities because they make me feel vulnerable. | -.047 | -.022 | **.939** |
| 13. When I try to relax my body, I feel like I'm losing control. | -.024 | .006 | **.928** |

*Note.* F1 = Social appealing concerns; F2 = Social performance concerns; F3 = Physical concerns. Factor loadings above 0.4 were bolded.

- The Chinese version RSI had good internal consistency reliability (αs = .750 to .860) but relatively low 2-week test-retest reliability ($rs$ = .525 to .685), and all RSI scores were correlated with most of the psychological symptoms (see Table 2).

Table 2 Zero-order correlations among the RSI scores and measures of validity

| | RSI-total | RSI-SA | RSI-SP | RSI-PC |
|---|---|---|---|---|
| RSI-SA | .867** | 1 | .591** | .605** |
| RSI-SP | .783** | .591** | 1 | .456** |
| RSI-PC | .856** | .605** | .456** | 1 |
| ASI-total | .606** | .471** | .513** | .535** |
| ASI-PC | .520** | .377** | .412** | .500** |
| ASI-CC | .588** | .447** | .511** | .517** |
| ASI-SC | .545** | .457** | .475** | .444** |
| Social anxiety | .319** | .245** | .312** | .252** |
| Anxiety | .536** | .400** | .445** | .493** |
| Phobic anxiety | .474** | .413** | .333** | .433** |
| Somatization | .414** | .289** | .300** | .428** |
| PTSD | .432** | .327** | .336** | .409** |
| Negative affect | .566** | .475** | .432** | .505** |
| Worry | .520** | .437** | .491** | .394** |
| Depression | .590** | .466** | .468** | .537** |
| Positive affect | -.011 | -.003 | .007 | -.026 |

*Note.* **$p < 0.01$. ASI = Anxiety Sensitivity Index ; *SA* = Social appealing concerns; *SP*= Social performance concerns; *PC* = Physical concerns; *CC* = Cognitive concerns; *SC* = Social concerns.

- Distinct from anxiety sensitivity, *Physical concerns* and *Social appealing concerns* predicted relaxation-induced anxiety (see Table 3), while *Social performance concerns* solely predicted social anxiety ($p < .001$). This may reflect that *Social performance concerns* is a unique factor mainly related to social anxiety, as also suggested by Hoffman (2019) and Voncken et al. (2010), and its relationship with RIA may be indirect or weaker.

Table 3 RSI and ASI-3 scores predicting relaxation-induced anxiety

| | | β | t | p |
|---|---|---|---|---|
| Model 1 | RSI-total | .175 | 3.042 | .002 |
| | ASI-total | .005 | 0.087 | .930 |
| Model 2 | RSI-SA | .108 | 2.189 | .029 |
| | RSI-SP | -.039 | -0.769 | .442 |
| | ASI-SC | .083 | 1.611 | .108 |
| Model 3 | RSI-PC | .237 | 4.613 | <.001 |
| | ASI-PC | -.050 | -0.936 | .350 |

## Conclusions

The Chinese version of the RSI possesses a factor structure different from that in the western population. The robustness of factor structure and test-retest reliability was not as good as expected. Further research is warranted to explore the validity of the RSI in Chinese samples.

## References

[1] Luberto, C. M., McLeish, A. C., & Kallen, R. W. (2021). Development and Initial Validation of the Relaxation Sensitivity Index. *International journal of cognitive therapy*, 14(2), 320–340.

[2] Hoffman, T. (2019). The Psychodynamics of Performance Anxiety: Psychoanalytic Psychotherapy in the Treatment of Social Phobia/Social Anxiety Disorder. *Journal of Contemporary Psychotherapy*, 49(3), 153–160 .

[3] Voncken, M. J., Dijk, C., de Jong, P. J., & Roelofs, J. (2010). Not self-focused attention but negative beliefs affect poor social performance in social anxiety: An investigation of pathways in the social anxiety-social rejection relationship. *Behaviour Research and Therapy*, 48(10), 984–991.