

## RESEARCH ARTICLE

# A Spanish adaptation and validation of the Interpersonal Emotion Regulation Questionnaire

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## ABSTRACT

Intrapersonal Emotion Regulation is a widely studied and recognized term as an essential variable in people's well-being, and their optimal psychosocial functioning. It has not been until recent years that Interpersonal Emotion Regulation (IER) has been taken into account in studies focused on emotional life and academic performance. The Interpersonal Emotion Regulation Questionnaire (IERQ) is one of the few self-report instruments designed for the evaluation of this construct. As far as we know, there is no tool that evaluates this variable in the Spanish language. The present study aims to adapt and validate the IERQ in the Spanish population (n = 289). Maintaining the internal structure of the original scale, it has been found that the Spanish version of the IERQ (IERQ-S) is a valid instrument for the evaluation of IER in the Spanish population.

**Keywords:** social behaviors; emotional regulation; validation; emotional and social competency

## 1. Introduction

Recent decades have shown an increased interest in Emotion Regulation (ER) study<sup>[1]</sup>. Traditionally, ER is understood as the process or ability to experience an emotion, understand it and interfere with it in order to modify the experience of that emotion<sup>[2]</sup>, and is studied within what is often referred to as “emotional intelligence”<sup>[3]</sup>. This approach assumes that ER depends on the person's conscious decision about what to experiment, what to attend to and what stimuli to give an answer to after the emotional situation has been experienced. This idea suggests that neither the emotional situation itself nor the environmental elements involved in it exert an influence on the person; they only show a particular situation to react to Barthel et al.<sup>[4]</sup>. From this perspective, we would speak of intrapersonal regulation of emotions.

However, newer models of emotion regulation argue that emotions are rarely experienced in a social vacuum<sup>[4-6]</sup>. Humans are social and they experience, express, and regulate emotions with others<sup>[4]</sup>. Following this approach, one of the highest limitations of the intrapersonal approach in ER study is to distinguish between categorically positive (cognitive reappraisal) and negative (emotion suppression) mechanisms, when it could be said that flexible regulation is more beneficial for the person. This means that depending on the context and

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culture of the people, the emotional regulation strategy used will be more or less positive and effective<sup>[5,7]</sup>. For example, a person belonging to a more collectivist culture (East Asia), is likely to find emotional suppression more beneficial than a person belonging to a more individualistic culture (Western European or American), because emotional suppression helps to reduce disruption and maintain group harmony and is less threatening to the emotional well-being of others<sup>[8-10]</sup>. In fact, different researches have shown that the effectiveness of one or another intrapersonal emotional regulation strategy is closely linked to the subject's cultural context<sup>[11,12]</sup>.

In addition, limiting the study of ER to intrapersonal processes alone would imply disregarding what research in the field of developmental psychology suggests, according to which ER comes from an interpersonal process that is associated with the early emotional expression of the child and his/her attachment figure<sup>[5]</sup>.

Several authors propose an explanatory model of Interpersonal Emotional Regulation (IER) in which two different types of strategies are distinguished. On the one hand, those referred to as intrinsic, refer to several different processes, including the "labelling" of one's own emotions, when we want to describe to another person what we feel at a specific moment, a process that involves introspection about our own internal emotional states. Other intrinsic strategies include, for example, social shaping, which involves observing what others do in similar situations, or perspective taking, consisting of getting others to help reframe or reflect on the emotional situation reflect on emotional situation<sup>[6,13-15]</sup>. In contrast, extrinsic interpersonal ER processes involve explicit feedback from others in order to facilitate the regulation of one's own emotions<sup>[6]</sup>.

According to Hofmann<sup>[5,14]</sup>, Interpersonal Emotion Regulation (IER) is a new way of understanding ER process, explaining it as a construct in which personal emotions are regulated by other people through four domains: *Enhancing Positive Affect, Perspective Taking, Soothing, and Social Modeling*.

Other authors such as Williams et al.<sup>[16]</sup> have highlighted the importance of IER, marking that its psychological structure has yet to be studied. In their investigation, they suggest that people with a higher tendency and efficacy in IER strategies tend to be more empathetic and socially connected. Furthermore, they found that those who are more skilled in handling IER strategies show higher levels of well-being. In this sense, Dixon-Gordon et al.<sup>[17]</sup> underline the relationship between deficient IER and the manifestation of different psychopathologies. Moreover, psychological literature has revealed that ER and emotional intelligence is a crucial predictor of learner's capability to successfully regulate and manage academic demands<sup>[18,19]</sup>.

Therefore, and following, the recommendations of the authors, the study of IER should be increased among the educational community. Considering the long formative period that schooling entails, educational spaces become the privileged place for training children and young people in the acquisition of the best strategies for emotional regulation and, therefore, an ideal space to work towards global mental health care<sup>[20]</sup>, one of the most relevant challenges of recent years.

In fact, several studies suggest that social-emotional learning positively influences the acquisition of competences in both domains and has an impact on academic outcomes both in the early and later years of schooling<sup>[21,22]</sup>. The development and implementation of the RULER, an evidence-based approach to social and emotional learning (SEL) developed at the Yale Center for Emotional Intelligence, is proof of this. Also, studies such as that of Okwuduba et al.<sup>[18]</sup> found IER and intelligence as the best predictor of academic performance, more than gender and age.

Despite the importance of IER, most research has focused on intrapersonal emotional regulation strategies, so that a better understanding of interpersonal strategies has yet to be developed. Nevertheless, the growing interest in understanding the mechanisms underlying IER has led to the development of instruments to facilitate its study and assessment, but the construct reliably is required. For this purpose, Hofmann et al.<sup>[14]</sup> have

designed the Interpersonal Emotion Regulation Questionnaire (IERQ), one of the first scales to evaluate IER to date. Other researches have proposed alternative measures for this variable<sup>[16]</sup>, but that of Hoffmann et al.<sup>[14]</sup> has been extensively validated in other languages<sup>[23–27]</sup>, although not in Spanish to date. Therefore, the main aim of the present study is the translation and validation of the Interpersonal Emotion Regulation Questionnaire (IERQ) into Spanish, to be used with the Spanish population. Specifically, given our interest in studying emotional regulation in educational contexts, this research has focused on the IER of students.

## 2. Method

### 2.1. Participants

The convenience sample included 298 Spanish university students (109 men; 189 women;  $M = 24.8$  years;  $SD = 5.8$ ) who were recruited through an online questionnaire. The inclusion criteria specified adults 18 or older with Spanish nationality and enrolled in a university degree. All participants received information about the purpose of the questions, and they were asked to answer voluntarily and anonymously.

According to statistical recommendations<sup>[28]</sup>, a factor analysis requires between 5 and 10 participants per item, as long as the total number of participants is not less than 200. Therefore, the aim of this research was to have at least 200 participants to validate the measure.

### 2.2. Procedure

The first step in this process was the translation procedure. An English-Spanish interpreter was contacted to translate the items from the original scale from English into Spanish. The resulting items were reviewed with an expert in psychology and psychopathology research with experience in the use and appliance of these tests.

Following this process, a different interpreter translated the items from Spanish into English to identify any possible differences between the two versions. After modifying the found disparities, a final Spanish version of the scale was obtained.

The ethic committee from the Personality, Evaluation and Clinical Psychology Departmental Unit of Complutense University of Madrid approved this investigation project.

### 2.3. Measures

Interpersonal Emotion Regulation Questionnaire (IERQ)<sup>[14]</sup>. The IERQ is a self-report questionnaire that evaluates Interpersonal Emotion Regulation. That is, how people search other people to regulate their emotions. The original version of this questionnaire contains 20 items and participants respond using a five-point Likert scale (1 = not true for me at all to 5 = extremely true for me). Item examples include “Seeing how others would handle the same situation helps me when I am frustrated” or “I like being in the presence of others when I feel positive because it magnifies the good feeling”.

Items are distributed through four subscales: 1) *Enhancing Positive Affect*, which describes tendency of looking for others to enhance feelings of happiness and joy; 2) *Perspective Taking*, which involves using others to be reminded not to worry and that other people have things worse; 3) *Soothing*, which consists of seeking out other people to feel more comfort; and 4) *Social Modeling*, which describes looking for others to learn how to deal with a given situation<sup>[14]</sup>.

Internal consistency of the four subscales ( $\alpha = .89$  for *Enhancing Positive Affect*;  $\alpha = .91$  for *Perspective Taking*;  $\alpha = .94$  for *Soothing*; and  $\alpha = .93$  for *Social Modeling*) are excellent<sup>[14]</sup>.

### 3. Statistical analysis

Descriptive and reliability statistical analyses were performed using SPSS Statistics Base 25<sup>[29]</sup>. First, the Kolmogorov-Smirnov test was used, and results showed that all included variables followed a normal distribution. Secondly, a confirmatory factor analysis (CFA) was performed using AMOS v.22 statistical program for SPSS.

Reliability was calculated using Cronbach's alpha<sup>[30]</sup>. Reliability results were obtained for the full scale and for each factor.

CFA was carried out using the maximum likelihood method. According to the recommendations of authors such as Hair et al.<sup>[31]</sup>, some measures of model fit were used: comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). For the CFI and the TLI, values exceeding 0.90 signify acceptable fit<sup>[32]</sup>. For the RMSEA values below 0.05 are indicative of good fit<sup>[33]</sup>.

The chi-square ( $\chi^2$ ) value is shown divided by the degrees of freedom (CMIN/DF). For the CMIN/DF values, close to 2 means a suitable fit<sup>[34]</sup>.

The estimation of the model was based on the proposed by Hofmann et al.<sup>[14]</sup> one, with the objective of observing to what extent the theoretical model of four factors fits the Spanish population.

## 4. Results

### 4.1. Construct validity

The Kaiser-Meyer-Olkin test showed good sampling adequacy test (88) and Bartlett's test of sphericity was significant,  $\chi^2(91) = 945.78, p < 0.001$ . Together, this indicates that the data was suitable for a factor analysis.

The internal structure of IERQ-S was evaluated through a confirmatory factor analysis (CFA), testing the original factor solution found. As shown in **Table 1**, this model provided a good fit (CMIN/DF = 2.444; CFI = 0.900; TLI = 0.885; RMSEA = 0.071, confidence interval -CI- = 0.080 – 0.062).

For the purpose of getting a better model fit some errors were correlated (item 13–item 18; item 14–item 17; item 7–item 10; item 11–item 15). These correlations significantly reduced Chi and CMIN/DF values (CMIN/DF = 1.698). Also, better measures were found for the selected fit indexes (CFI = 0.954; TLI = 0.944; RMSEA = 0.049; CI = 0.059–0.039) (**Table 1**). Correlations between the four factors in model 1 ranged from  $r = 0.34$  to  $r = 0.75$  ( $\rho = 0.001$ ) and from  $r = 0.35$  to  $r = 0.81$  ( $\rho = 0.001$ ) in model 2.

**Table 1.** Goodness-of-Fit indexes of models 1 and 2 estimated in the CFA.

	Chi	DF	CMIN	CFI	TLI	RMSEA
Model 1	400.749	164	2.444	0.900	0.885	0.071
Model 2	269.932	159	1.698	0.954	0.944	0.049

The **Figure 1** shows the factorial structure of the final model of IERQ-S.

### 4.2. Reliability

Cronbach's alpha was calculated to measure reliability. According to Cronbach criteria<sup>[30]</sup>, internal consistency for the full scale is generally adequate ( $\alpha = 892$ ). The results for each subscale are pretty good as well ( $\alpha = 805$  for *Enhancing Positive Affect*;  $\alpha = 731$  for *Perspective Taking*;  $\alpha = 843$  for *Soothing*; and  $\alpha = 824$  for *Social Modeling*).

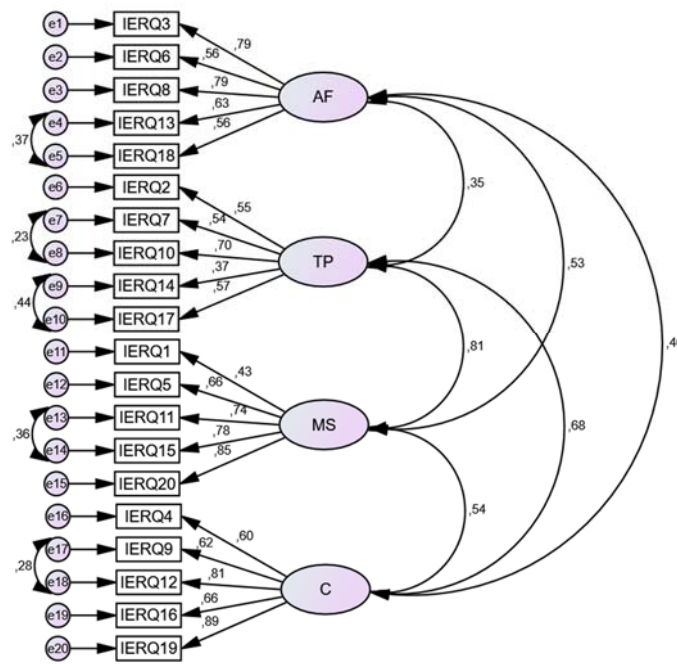


Figure 1. Final model for the Spanish version of the IERQ-S.

## 5. Discussion

The present study aimed to validate the IERQ<sup>[14]</sup> in a Spanish university student population. Results reveal that the IERQ is a valid scale to assess IER in this population. The current study is the first one to validate a Spanish measure for this variable to date.

IER involves a process of emotion management with an important social charge. Research has shown how regulating emotions with peer support generates greater feelings of group affiliation, greater perceived support, improved relationships and, consequently, emotional well-being<sup>[16]</sup>, which is related to a good learning climate<sup>[18]</sup>. In this sense, IER has also been associated with the reduction of internalized symptoms such as depression<sup>[35]</sup>. The literature has highlighted that the presence of psychopathological symptomatology in students is related to higher rates of personal and social distress and lower academic success<sup>[36]</sup>. Therefore, considering IER in relation to classroom climate and learning becomes necessary. Also, given the wide-ranging benefits that emotional regulation seems to have from an interpersonal perspective, it is vital to have validated instruments to assess it in order to be able to work and intervene on it.

In response to this need, as described, our study attempted to adapt the IERQ<sup>[14]</sup> to a Spanish sample. CFA shows that the Spanish version (IER-Q) preserves the original factorial distribution. Although fit indexes for Hofmann et al.<sup>[14]</sup> model were appropriate in the Spanish population, some changes were suggested. Five errors from the different subscales were correlated (item 13–item 18; item 14–item 17; item 7–item 10; item 11–item 15), enhancing the model fit and maintaining the original factorial structure.

Errors in items 13 and 18 seem to be associated since both of them reference the need to share happiness with other people. It is logical to think that people who answer in one way to item 13, will answer similarly in the 18. The same circumstance occurs with items 14 and 17. They point out the positive effect of others' soothing words on one's emotion regulation. Responses to items 11 and 15, which refer to the strategy of thinking about what other people would do in a similar situation, are conditioned as they were in previous cases. Items 9 and 12 also keep a relation in the answer tendency. Both of these items describe the necessity of seeking other people to reduce discomfort. Finally, the wording and meanings of items 7 and 10 seem to be

very close as well, as they both refer to a situation in which “sooth” appears when other persons highlight that things could be worse than they actually are.

The indicated residual pairs conceptually share a certain level of variability. It seems possible that the answers to these items are related, so the responses given to one item will be related to the other one.

The resulting model with correlated errors showed proper goodness-of-fit very similar to that found in Hofmann’s original research<sup>[14]</sup>. Hofmann<sup>[14]</sup> CFI model is 0.97 and the one in the current investigation is 0.95. RMSEA values are the same in both studies (RMSEA = 0.049). The results of the CFA showed that the emerged model fit indices support the four-factor structure of the scale (CFI = 0.95, RMSEA = 0.049).

Turkish versions of the instrument<sup>[24,37]</sup> also confirmed the constitution of this measure on the four dimensions initially proposed by Hofmann et al.<sup>[14]</sup>, with figures very similar to those achieved in this study. Accordingly, findings supported that the general concept of IER and its sub-strategies are represented in the same way in different cultures.

In addition, internal consistency of the full scale and of each factor is adequate ( $\alpha = 0.892$ ). The results for each subscale are pretty good as well ( $\alpha = 0.805$  for *Enhancing Positive Affect*;  $\alpha = 0.731$  for *Perspective Taking*;  $\alpha = 0.843$  for *Soothing*; and  $\alpha = 0.824$  for *Social Modeling*). These data are similar to those obtained by other authors such as Hofmann et al.<sup>[14]</sup> and Sarisoy-Aksüt and Gençöz<sup>[37]</sup>.

It can be concluded that the Spanish version of the IERQ is a reliable and valid measure for the assessment of IER. Although IER is only one part of the complex process of emotion management, it is necessary to have tools for its assessment since the study of ER has focused on the cognitive regulation of one’s own emotions, leaving aside the social role of this process. The IERQ is a very stable measure for assessing this variable, as its various adaptations have proven its factor structure and have achieved very similar and adequate psychometric values.

## 6. Limitations and future directions

According to Kline<sup>[28]</sup>, the sample of the present study (289 people) is enough to estimate the CFA, although it may be a small sample. It also included a broad age range and balanced gender composition. Nevertheless, this study used non-random sample, with a high predominance of young people with higher education and thus the present findings may not be generalized to the population.

It also would be interesting for future work to carry out a similar validation process and compare the effectiveness of Williams et al.<sup>[16]</sup> measure and the one in this work, both in the Spanish population. Also, and in line with this idea, convergent and discriminant validity studies for both, traditional and recently newly published scales for IER measurement, would be of interest. For future research, it would be useful to introduce an intrapersonal ER instrument to find out how it behaves alongside the regulation of emotions of a more social nature.

In future investigations, it might be worthwhile to validate the scale for clinical samples, in order to study this process in emotional disorders and develop appropriate and more comprehensive interventions.

## 7. Conclusions

Even though emotion regulation is a traditional construct among the scientific community<sup>[1]</sup>, IER is a more recent term in scientific literature<sup>[14]</sup>. For this reason, scales for its evaluation are scarce.

Currently, and to the best of our knowledge, there are no IER scales for the Spanish speaking population. Thus, the main goal of the current study was to validate and submit a Spanish version for the IERQ<sup>[14]</sup>. The

resulting model shows a factorial structure of four dimensions (*Enhancing Positive Affect, Perspective Taking, Soothing, and Social Modeling*) with five items for each dimension, including 20 items total, as in the original scale. The proposed questionnaire has proved to be a good and valid option to measure IER in the Spanish population.

## Author contributions

Conceptualization, MdOR, GPSS, MÁC and SGH; methodology, MdOR and GPSS; software, MdOR, GPSS and MÁC; validation, MdOR, GPSS and MÁC; formal analysis, GPSS; investigation, MdOR, GPSS and MÁC; resources, MdOR, GPSS and MÁC; data curation, MdOR, GPSS and MÁC; writing—original draft preparation, MdOR, GPSS, MÁC and SGH; writing—review and editing, SGH; supervision, MdOR, GPSS, MÁC and SGH. All authors have read and agreed to the published version of the manuscript.

## Conflict of interest

Dr. Hofmann receives financial support by the Alexander von Humboldt Foundation (as part of the Alexander von Humboldt Professor), the Hessische Ministerium für Wissenschaft und Kunst (as part of the LOEWE Spitzen Professor), NIH/NIMH R01MH128377, NIH/NIMHU01MH108168, Broderick Foundation/MIT, and the James S. McDonnell Foundation 21st Century Science Initiative in Understanding Human Cognition—Special Initiative. He receives compensation for his work as editor from Springer Nature. He also receives royalties and payments for his work from various publishers.

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## Appendix

Spanish version of Interpersonal Emotion Regulation Questionnaire (IERQ-S) items and scoring.

Se presentan a continuación una lista de afirmaciones que describen la(s) forma(s) en que las personas se valen de otros para ayudarse a regular las propias emociones. Por favor lea cada una de ellas y marque la que considere más adecuada en su caso. No existen respuestas correctas o incorrectas.

1	2	3	4	5	
No es cierto en absoluto para mí	Un poco	Moderadamente	Bastante	Muy cierto para mí	
1. Saber cómo otras personas manejan sus emociones me hace sentir mejor.	1	2	3	4	5
2. Cuando me siento desanimado/a, los comentarios de los demás acerca de que las cosas no están tan mal, me ayudan a lidiar con mi estado de ánimo.	1	2	3	4	5
3. Me gusta estar acompañado/a cuando tengo muchas ganas de compartir mi alegría.	1	2	3	4	5
4. Busco el apoyo de otras personas cuando me siento disgustado/a.	1	2	3	4	5
5. Cuando estoy preocupado/a, me ayuda escuchar la opinión de otras personas sobre cómo solucionar los problemas.	1	2	3	4	5
6. Cuando estoy eufórico/a, me gusta estar con determinadas personas.	1	2	3	4	5
7. Cuando estoy disgustado/a, me ayuda que los demás me recuerden que hay personas que están peor.	1	2	3	4	5
8. Me gusta estar con otras personas cuando me siento positivo/a, porque aumenta mi sensación de bienestar.	1	2	3	4	5
9. Cuando estoy disgustado/a intento que otros me compadezcan.	1	2	3	4	5
10. Cuando estoy disgustado/a, me hace sentir mejor que otros me hagan comprender que las cosas podrían ser mucho peores.	1	2	3	4	5
11. Cuando estoy frustrado/a, me ayuda ver cómo otras personas reaccionan ante la misma situación.	1	2	3	4	5
12. Cuando estoy disgustado/a, intento que los demás me consuelen.	1	2	3	4	5
13. Dado que la felicidad es contagiosa, busco a otras personas cuando estoy contento/a.	1	2	3	4	5
14. Cuando estoy molesto/a, me calmo si me dicen que no le dé importancia.	1	2	3	4	5
15. Cuando estoy triste, me ayuda a escuchar cómo otros han tratado con sentimientos similares.	1	2	3	4	5
16. Cuando estoy deprimido/a, busco a otras personas solo para asegurarme de que hay quien me quiere.	1	2	3	4	5
17. Que otros me digan que no me preocupe, me ayuda a calmarme cuando estoy ansioso/a.	1	2	3	4	5
18. Cuando me siento eufórico/a, busco a otras personas para hacerlas felices.	1	2	3	4	5
19. Cuando estoy triste, busco a otras personas que me consuelen.	1	2	3	4	5
20. Si estoy disgustado/a, me gusta saber qué harían otras personas en mi situación.	1	2	3	4	5

English version of Interpersonal Emotion Regulation Questionnaire (IERQ-S) items and scoring.

**Below is a list of statements that describe how people use others to regulate their emotions. Please read each statement and then circle the number next to it to indicate how much this is true for you by using a scale from 1 (not true for me at all) to 5 (extremely true for me). Please do this for each statement. There are no right or wrong answers.**

1	2	3	4	5	
Not true for me at all	A little bit	Moderately	Quite a bit	Extremely true for me	
1. It makes me feel better to learn how others dealt with their emotions.	1	2	3	4	5
2. It helps me deal with my depressed mood when others point out that things aren't as bad as they seem.	1	2	3	4	5
3. I like being around others when I'm excited to share my joy.	1	2	3	4	5
4. I look for other people to offer me compassion when I'm upset.	1	2	3	4	5
5. Hearing another person's thoughts on how to handle things helps me when I am worried.	1	2	3	4	5
6. Being in the presence of certain other people feels good when I'm elated.	1	2	3	4	5
7. Having people remind me that others are worse off helps me when I'm upset.	1	2	3	4	5
8. I like being in the presence of others when I feel positive because it magnifies the good feeling.	1	2	3	4	5
9. Feeling upset often causes me to seek out others who will express sympathy.	1	2	3	4	5
10. When I am upset, others make me feel better by making me realize that things could be a lot worse.	1	2	3	4	5
11. Seeing how others would handle the same situation helps me when I am frustrated.	1	2	3	4	5
12. I look to others for comfort when I feel upset.	1	2	3	4	5
13. Because happiness is contagious, I seek out other people when I'm happy.	1	2	3	4	5
14. When I am annoyed, others can soothe me by telling me not to worry.	1	2	3	4	5
15. When I'm sad, it helps me to hear how others have dealt with similar feelings.	1	2	3	4	5
16. I look to other people when I feel depressed just to know that I am loved.	1	2	3	4	5
17. Having people telling me not to worry can calm me down when I am anxious.	1	2	3	4	5
18. When I feel elated, I seek out other people to make them happy.	1	2	3	4	5
19. When I feel sad, I seek out others for consolation.	1	2	3	4	5
20. If I'm upset, I like knowing what other people would do if they were in my situation.	1	2	3	4	5

Source: Hofmann et al.<sup>[14]</sup>.