Maladaptive Consequences of Mental Intrusions with Obsessive, Dysmorphic, Hypochondriac, and Eating-disorders Related Contents: Cross-cultural Differences

Belen Pascual-Vera, Burcin Akin, Amparo Belloch, Gioia Bottesi, David A. Clark, Guy Doron, Hector Fernandez-Alvarez, Marta Ghisi, Beatriz Gomez, Mujgan Inozu, Antonia Jimenez-Ros, Richard Moulding, M. Angeles Ruiz, Giti Shams, Claudio Sica

Department of Psychology, University of Texas at El Paso, El Paso, USA
Department of Psychology, Texas Tech University, Lubbock, USA
Department of Psychology, Texas Tech University, Lubbock, USA
Department of Psychology, University of Padova, Italy
Department of Psychology, Hacettepe University, Ankara, Turkey
Department of Psychology, Interdisciplinary Center Herzliya, Tel Aviv, Israel
Aigle Foundation, Buenos Aires, Argentina
Department of Psychology, Hacettepe University, Ankara, Turkey
Psychology Research Centre (CIP/UAL) & Universidade do Algarve, Faro, Portugal
Department of Psychology, Deakin University, Melbourne, Australia
Universidad Nacional de Educacion a Distancia UNED, Madrid, Spain
Department of Psychiatry, Tehran University of Medical Science, Roozbeh Hospital, Tehran, Iran
Department of Human Health Science, University of Firenze, Italy

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Abstract
Background/Objective: Unwanted mental intrusions (UMIs) with contents related to Obsessive-Compulsive Disorder (OCD), Body Dysmorphic Disorder (BDD), Illness Anxiety Disorder (IAD), and Eating Disorders (EDs) are highly prevalent, independently of the cultural and/or social context. Cognitive-behavioral explanations for these disorders postulates that the escalation from common UMIs to clinically relevant symptoms depends on the maladaptive consequences (i.e., emotions, appraisals, and control strategies) of experiencing UMIs. This study examines, from a cross-cultural perspective, the cognitive-behavioral postulates of the maladaptive consequences of having UMIs. Method: Non-clinical 1,473 participants from Europe, the Middle-East, and South America completed the Questionnaire of Unpleasant Intrusive Thoughts to assess the maladaptive consequences of experiencing highly disturbing OCD, BDD, IAD, and EDs-related UMIs.

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Cognitive behavioral theories trace the origins of obsessions to commonly occurring unwanted mental intrusions (UMIs) that are universally experienced in the general population. Initially proposed by Rachman and De Silva (1978), this suggestion has been supported by several cross-cultural studies (i.e., Clark et al., 2014; Moulding et al., 2014; Pascual-Vera et al., 2017). For instance, UMs have been described as normal variants of obsessions, compulsions, and the functional relationship between them. Recent support for this claim comes from a study by Pascual-Vera and Belloch (2018b) that examines the functional links between UMs with OCD, BDD, IAD, and EDs-related contents in the same individual. The results showed similarities and differences in the maladaptive consequences linked to the four UMI contents. IAD-related intrusions caused the highest emotional distress, but not differences were observed among OCD, BDD and EDs-related intrusions. OCD-related intrusions were the most interfering, whereas EDs intrusions interfered less than all the other UMIs. The four UMIs were equally ego-dystonic, and they were similarly appraised by both men and women, except

Results: Findings revealed main effects for both the country and the consequences associated with the four UMI contents. Interaction effects between the consequences of each UMI content and the sample location were also observed. Conclusions: Cognitive-Behavioral models for OCD, BDD, IAD, and EDs should be implemented along with socio-cultural variables that increase the understanding of the role of these variables in the phenomenology of UMIs and their associated consequences.

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for the OCD-related intrusions, which were more dysfunc-
tionally appraised by women. Finally, the four UMIs insti-
gated the urge to “do something”, supporting the link
between unwanted mental intrusions and behaviors to alle-
viate the discomfort they cause.

Nevertheless, the perceived negative consequences asso-
associated with the experience of UMIs, irrespectively of their
content, could be modulated by cultural variables. Following
Marsella and Yamada (2010): “Culture is shared learned
behavior and meanings that are socially transmitted for pur-
poses of adjustment and adaptation (…) It is represented
internally (i.e., cognitively, emotionally) by values, atti-
tudes, beliefs, epistemologies, (…) coded in verbally, imag-
istically, proprioceptively, viscera1y, and emotionally,
resulting in different experiential structures and processes”
(p. 105). From this perspective, cultural variables influence
how and when the emotional expression of the UMI is cultur-
ally suitable/acceptable, or to what extent the immediate
appraisal of a given thought, feeling or impulse depends on
the implicit beliefs and values ascribed to these thoughts,
feelings and impulses (Inozu et al., 2012; Nicolini et al.,
2017; Sica et al., 2002). These issues have partly been
studied regarding OCD-related intrusive thoughts.
Sica et al. (2006) compared the beliefs about obsessive UMIs
in three groups of non-clinical individuals from Italy, Greece,
and the US. Results indicated that beliefs were correlated
in three groups of non-clinical individuals from Italy, Greece,
Sica et al. (2006) compared the beliefs about obsessive UMIs
studied regarding OCD-related intrusive thoughts.

Moulding et al. (2014) found that the relationships between
the frequency of obsessive intrusions and their associated appraisals and
control strategies were similar across countries. Pascual-
Vera et al. (2019) conducted the largest study published to
date on the cross-cultural differences in the expression of
UMIs related to OCD, BDD, IAD, and EDs in 1,473 non-clinical
adults from 10 cities in seven countries and three continents.
They found that 64% of the total sample reported having experienced all four UMIs. EDs-related intrusions were the
most frequently experienced, whereas IAD intrusions were
the least frequent, but the most disturbing. All the UMIs
were significantly related to each other in terms of frequency and
disturbance, and all of them were associated with clinical
measures of OCD, BDD, IAD, and EDs. In a study with uni-
versity students Pascual-Vera and Belloch (2021b) found that
up to 61.53% of the participants who experienced UMIs
related to OCD, BDD, IAD, and EDs presented high risk to OCD
and reported more negative consequences when they experi-
enced UMIs, whatever it was their content. Similar results
were also found in up to 71% individuals with OCD, who expe-
rienced UMIs with different contents not always related to
typical obsessive themes (Pascual-Vera & Belloch, 2021).

The above-mentioned studies show the relevance of
examining to what extent cultural differences might be
associated with the experience of UMIs, and they suggest
the need to conduct cross-cultural studies to improve our
knowledge about how psychological phenomena might vary
across cultural groups (Koç & Kafa, 2019; Sica et al., 2006).
This was the main research question of current study, since
it seeks to examine cross-cultural differences in the
perceived maladaptive consequences of the four sets of
UMIs: obsessive, dysmorphic, illness, and eating-disorders
related. A within-subject perspective was adopted, with the
aim of reducing the variability in the putative differential
consequences of different UMI contents in the same individ-
ual. The cross-cultural expression of the four UMI contents
was compared across participants from different countries
and continents. We would expect that there will be differen-
ces in the emotional impact, interference, egodystonicity,
and dysfunctional appraisals individuals attach to the UMIs,
and in the thought control and/or neutralizing strategies
used to manage them, depending on the participants’ coun-
try and culture, beyond differences between the four UMIs.
Only participants who had experienced all four types of UMIs
in the past three months were included in these analyses,
which makes these intrusions closer to those experienced by
individuals with the disorders related to their contents.

Method
Participants
A sample of 1,473 participants in 10 cities in seven countries
and three continents volunteered to participate in the current
study. The sites were in the Middle East and Asia (Her-
ziya, Tel Aviv in Israel; Ankara in Turkey; and Tehran in
Iran), Europe (Firenze and Padova in Italy; Algarve in Portu-
gal; Valencia, Teruel, and Madrid in Spain), and South Amer-
ica (Buenos Aires in Argentina). Of the total sample, 74% of
the participants (n = 1,086) were women, and 26% (n = 387)
were men (χ² = 331.70, p < .0001). Their ages ranged from
18 to 64 years (M = 28.09, SD = 11.24 years). Most of the par-
ticipants in all the countries (70.2%) had university studies.
Having diagnosed mental health problems in the past six
months, undergoing psychological or pharmacological treat-
ment (criterion a), or not being in the 18-to-65 age range
(criterion b) were non-inclusion criteria. A total of 123 indi-
viduals (criterion a, n = 108; criterion b, n = 15) were not
included in the data analyses. From the initial sample, a
total of 611 individuals (M = 25.88, SD = 9.78 years; 80%
women) reported having experienced the four most upset-
ting UMI in the past three months. Consequently, this was the
final sample included in the study. Figure 1 shows the
participants flowchart. The demographic characteristics of
participants by site are on Table 1.

Instruments
Socio-demographic data sheet. The data required were the
following: age, gender, years of education, marital status, and
socio-economic level. Two additional questions about the part-
cipants’ current mental-health status were also included:
(1) Do you have been diagnosed of a mental or behavioral dis-
order during the past six months, or are you currently receiv-
ing treatment for a mental or behavioral disorder? (2) If yes,
could you write please the diagnosis and/or the treatment you
are receiving for this mental or behavioral disorder?

Questionnaire of Unpleasant Intrusive Thoughts (QUIT;
Pascual-Vera et al., 2019). This self-report explores
unwanted mental intrusions related to obsessive, dysmor-
phic, hypochondriacal, and EDs-related themes and the
functional links (emotions, appraisals, and control strategies) of each set of intrusions. After a detailed definition of UMIs and the different ways they can be experienced, four separate sets of intrusions are presented: OCD-related (12 items), BDD-related (9 items), IAD-related (10 items) and EDs-related (8 items). An additional set of relationship-related obsessive-compulsive phenomena (11 items) were also included, based on the work by Doron and colleagues (e.g., Doron et al., 2014). Respondents have to evaluate each UMI on its frequency (from 0 = never, to 6 = always) and the discomfort (from 0 = not at all, to 4 = extremely) it produces when it occurs.

After completing each set of intrusions, the respondent is asked to choose from the previous list the most upsetting intrusion s/he experienced in the past three months as much with a frequency ≥1 (Rarely, once or twice). Next, the consequences associated with the respondent’s most upsetting intrusion are evaluated through 14 items (from 0 = never/not at all, to 4 = always/frequently) that assess the emotional distress experienced, the interference, the associated egodystonicity, the maladaptive meanings the individual attaches to the selected intrusion, and the control and/or neutralizing strategies the person uses to manage the intrusion. The current study focuses on the scores on these consequences. The Cronbach alpha values obtained in each site were from acceptable to satisfactory (Table 2).

**Procedure**

The study of the cross-cultural expression and transdiagnostic nature of UMIs was proposed at the 3rd and 4th meetings of the Research Consortium on Intrusive Fears (RCIF), to which all the authors pertain, which were held in Valencia, Spain and Ankara, Turkey in 2014 and 2016, respectively. Two former pilot studies of the QUIT were conducted in Spanish community samples (Pascual-Vera et al., 2017; Pascual-Vera et al., 2019).
These analyses were performed with the Huynh-Feldt correction because Mauchly's tests of sphericity were violated. Data analyses were scheduled to attend an assessment session. A common data template was created to enter the same labels and categories across sites. The research protocol was approved by the Research Ethics Committee of the University of Valencia, in Spain (number H1385632037445). The consequences of experiencing the four UMI across the seven countries were examined using four different two-way mixed MANOVA s, once the homogeneity of variances (homoscedasticity) and multicollinearity were examined. The within-subjects factor was the content of the UMI (4 levels), and the between-groups factor was the site of the participants (7 levels, one per site), with the dependent variable being the consequences associated with each UMI (i.e., interference, egodystonicity, appraisals, and control strategies). Bonferroni adjustments for multiple post-hoc comparisons and effect sizes ($\eta^2$) were calculated. These analyses were performed with the Huynh-Feldt correction because Mauchly's tests of sphericity were violated. Data were analyzed using IBM SPSS Statistics (version 22).

Results

Preliminary data

As shown in Table 1, up to 41.4% ($n = 611$, $M_{age} = 25.88$, $SD = 9.78$; 80% women) of the sample reported having experienced the four most upsetting UMI in the past three months. The percentage rates of participants who experienced the four UMI modalities differed across countries ($\chi^2 = 200.84$, $p < .0001$). Between-group comparisons showed that the highest percentages of participants who experienced all the UMI were Turkish ($n = 181$; 29.67%), Portuguese ($n = 151$; 24.75%), and Spanish ($n = 122$; 20%), and the lowest percentages were for Iranian ($n = 15$; 2.45%), Argentinian ($n = 32$; 5.24%), Israelis ($n = 39$; 6.39%), and Italian ($n = 71$; 11.63%) participants.

The mean frequency and discomfort caused by these UMI were moderate (Table 3). Participants reported that the last time they experienced OCD-related and IAD-related intrusions was typically in the last month (OCD) and 3 months (IAD) before the time of the survey, whereas BDD and EDs intrusions were experienced daily. In all the participating countries, the most upsetting OCD-related intrusion was having doubts about leaving something on (e.g., kitchen stove, gas), the most upsetting BDD-related intrusion was about noticing an appearance defect, the most upsetting IAD-related intrusion was about a loved one having a serious disease, and, lastly, the most upsetting EDs-related intrusion was about being fat.

The age was negatively associated with the emotional impact caused by the BDD, IAD, and EDs related intrusions, respectively ($r = -.18$, $r = -.16$, $r = -.13$; all $p$’s $\leq .01$) and with the interference ($r = -.12$, $r = -.11$, for BDD, and EDs related intrusions, respectively; all $p$’s $\leq .05$). Nonetheless, the correlation coefficients were small, with $R^2$ ranging from .006 to .03.

Differences in the consequences of the most upsetting OCD, BDD, IAD, and EDs-related mental intrusions between the participants from the different countries

The MANOVA results showed significant main effects for the between-country differences in the emotional impact of the

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Table 2  Cronbach alpha values for the QUIT 2nd part.

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|-------------------|-------------|-------------|-------------|-------------|
| Argentina         | .75         | .79         | .78         | .79         |
| Iran              | .84         | .79         | .87         | .81         |
| Israel            | .85         | .83         | .88         | .88         |
| Italy             | .84         | .89         | .90         | .90         |
| Portugal          | .74         | .80         | .82         | .82         |
| Spain             | .76         | .80         | .83         | .83         |
| Turkey            | .78         | .82         | .85         | .82         |

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Table 3  Frequency and disturbance of the four mental intrusions that participants selected as most upsetting.

| Unwanted mental intrusions | Frequency | Disturbance |
|----------------------------|-----------|-------------|
| OCD-related                | 3.23 (1.35) | 2.60 (1.05) |
| BDD-related                | 3.05 (1.37) | 2.31 (1.12) |
| IAD-related                | 2.49 (1.26) | 2.64 (1.12) |
| EDs-related                | 3.38 (1.46) | 2.22 (1.17) |

Note. Data are Mean (SD).

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6 & Belloch, 2018b). The Spanish version of the QUIT was first translated to English, and then back translated to Spanish by an accredited English-Spanish translator. The final English version of the QUIT was translated and back-translated into the various languages in which it should be applied (Hebrew, Italian, Persian, Portuguese, and Turkish), following a standardized translation/back-translation protocol adopted by all authors. This protocol produced translated versions of the QUIT in seven languages (English, Hebrew, Italian, Persian, Portuguese, Spanish, and Turkish). Participants were recruited by the authors in each site from January 2017 to January 2018 from several sources: undergraduate students who attended their lectures at the University, advertisements on the University Campus, and the web page of each research group, requesting voluntary participation in a study on values and beliefs about thoughts. Those who explicitly agreed to participate and provided informed written consent were scheduled to attend an assessment session. A common data template was created to enter the same labels and categories across sites. The research protocol was approved by the Research Ethics Committee of the University of Valencia, in Spain (number H1385632037445).
dysfunctional appraisals attached to them (F (6, 587) = 9.42; p ≤ .01; \( \eta^2 = .08 \)), the interference in daily activities (F (6, 581) = 5.27; p ≤ .01; \( \eta^2 = .05 \)), the egodystonicity they caused (F (6, 584) = 6.67; p ≤ .01; \( \eta^2 = .64 \)), the dysfunctional appraisals attached to them (F (6, 576) = 10.21; p ≤ .01; \( \eta^2 = .09 \)), and the strategies used to control them (F (6, 566) = 10.05; p ≤ .01; \( \eta^2 = .09 \)). In all cases, the effect size was medium. Given the significance of the overall tests, the univariate effects were examined. Post-hoc analyses indicated that Iranian, Portuguese, Spanish, and Turkish participants reported the highest emotional impact of the four UMI contents, whereas Israelis and Italians reported the lowest (Table 4).

Regarding the interference caused by the four UMI contents, post-hoc analyses revealed that OCD intrusions were more interfering for Portuguese, Spanish, and Turkish participants, whereas they interfered less in the Italian participants. By contrast, in every site, the BDD and EDs-related intrusions caused a similar degree of interference, except in the Turkish individuals, who reported higher rates of interference by the BDD intrusions than Italian, and in the Iranian participants, who reported higher interference of EDs-related intrusions than Italian participants. In the case of IAD intrusions, Turkish and Portuguese reported the most interference, and Italian and Argentinian reported the least (Table 5).

As for egodystonicity, in every site, OCD, BDD, and EDs intrusions were assessed similarly, except for Spanish, who experienced both BDD and EDs-related intrusions as more egodystonic, compared to both Italian and Turkish participants. Regarding IAD intrusions, two subgroupings emerged: Israeli, Portuguese, and Spanish participants experienced the IAD-related intrusions as more egodystonic than Argentinian, Italian, and Turkish participants (Table 6).

Overall, the four UMI modalities were more dysfunctionally appraised by Iranian, Israeli, Portuguese, and Spanish than by Italian participants (Table 7). Taken together, Italians used the strategies to control all four intrusions less, but Turkish and Iranian used these strategies more (Table 8).

In the within-group comparisons (i.e., UMI content), significant differences were also observed, although with small size effects, in the emotional consequences of each UMI (F (2.858, 1677) = 18.35; p ≤ .01; \( \eta^2 = .03 \)), the interference it caused (F (2.949, 1713) = 20.92; p ≤ .01; \( \eta^2 = .03 \)), the dysfunctional appraisals (F (2.948, 1717) = 14.40; p ≤ .01; \( \eta^2 = .02 \)), and the control strategies (F (2.940, 1664) = 10.15; p ≤ .01; \( \eta^2 = .01 \)). However, there were no significant differences in the egodystonicity caused by each UMI (F (2.868, 1675) = 2.32). Post-hoc analyses indicated that IAD intrusions provoked the highest emotional impact in all the participants from Europe and Turkey, whereas Italians, Israelis, and Argentinians

### Table 4 Differences in the emotional impact caused by unwanted mental intrusions across countries and among four contents of intrusions

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|-------------------|-------------|-------------|-------------|-------------|
| Argentina         | 1.51 (0.19)\(^{a,b,c}\) | 1.68 (0.19)\(^{a,b}\) | 1.66 (0.19)\(^{a}\) | 1.63 (0.20)\(^{a,b}\) |
| Iran              | 2.17 (0.27)\(^{a}\) | 1.71 (0.28)\(^{a}\) | 2.32 (0.28)\(^{a}\) | 2.25 (0.29)\(^{a}\) |
| Israel            | 1.24 (0.16)\(^{a,b}\) | 1.26 (0.17)\(^{b}\) | 1.59 (0.17)\(^{b}\) | 1.20 (0.17)\(^{b}\) |
| Italy             | 1.22 (0.12)\(^{b}\) | 1.44 (1.12)\(^{a}\) | 1.63 (1.13)\(^{c}\) | 1.52 (1.13)\(^{a}\) |
| Portugal          | 1.72 (0.08)\(^{a}\) | 1.93 (0.08)\(^{a}\) | 2.43 (0.08)\(^{a}\) | 1.78 (0.09)\(^{a}\) |
| Spain             | 1.96 (0.09)\(^{a}\) | 2.02 (0.09)\(^{a}\) | 2.58 (0.10)\(^{b}\) | 1.87 (0.10)\(^{a}\) |
| Turkey            | 1.77 (0.07)\(^{a}\) | 1.83 (0.07)\(^{a}\) | 2.53 (0.08)\(^{b}\) | 1.74 (0.08)\(^{a}\) |

**Note.** Data are Mean (SD). Values which share the same superscript were not significantly different from each other. Superscripts \(^{a, b, c}\) indicate post-hoc within-group (UMIs content) differences. Superscripts \(^{1, 2, 3}\) indicate post-hoc between-groups differences (countries). Same superscript means no differences.

### Table 5 Differences in the interference caused by unwanted mental intrusions across countries and among four contents of intrusions.

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|-------------------|-------------|-------------|-------------|-------------|
| Argentina         | 2.06 (0.21)\(^{a,b}\) | 1.58 (0.21)\(^{a,b}\) | 1.16 (0.23)\(^{b}\) | 1.12 (0.21)\(^{b}\) |
| Iran              | 2.08 (0.34)\(^{a,b,c}\) | 1.25 (0.34)\(^{a,b,c}\) | 1.75 (0.37)\(^{a,b}\) | 2.25 (0.34)\(^{a,b}\) |
| Israel            | 1.79 (0.18)\(^{a,b}\) | 1.43 (0.18)\(^{a}\) | 1.48 (0.20)\(^{a}\) | 1.25 (0.19)\(^{a}\) |
| Italy             | 1.41 (0.14)\(^{a,b}\) | 1.14 (0.14)\(^{a,b}\) | 1.19 (0.15)\(^{a,b,c}\) | 0.97 (0.14)\(^{a,b}\) |
| Portugal          | 2.21 (0.09)\(^{a}\) | 1.54 (0.09)\(^{a}\) | 2.06 (0.10)\(^{a}\) | 1.45 (0.10)\(^{a}\) |
| Spain             | 2.15 (0.11)\(^{a}\) | 1.64 (0.11)\(^{b}\) | 1.76 (0.12)\(^{b}\) | 1.53 (0.11)\(^{b}\) |
| Turkey            | 2.20 (0.08)\(^{a}\) | 1.67 (0.08)\(^{b}\) | 2.01 (0.09)\(^{a}\) | 1.18 (0.09)\(^{a}\) |

**Note.** Data are Mean (SD). Values which share the same superscript were not significantly different from each other. Superscripts \(^{a, b, c}\) indicates post-hoc within-group (UMIs content) differences. Superscripts \(^{1, 2, 3}\) indicate post-hoc between-groups differences (countries). Same superscript means no differences.
assigned the same emotional impact to the four UMIs (Table 4). OCD-related intrusions were the most interfering for Spanish, Italian, Argentinian, Portuguese, and Turkish participants, although in the last two groups these intrusions were just as interfering as the IAD-related intrusions. Overall, the EDs intrusions were the least interfering for the participants from every country, except the Iranians, for whom these intrusions were the most interfering (Table 5). The egodystonicity caused by the four UMI contents was assessed equally by all participants (Table 6), but the dysfunctional appraisals attached to the UMI contents were different depending on the specific location of the sample (Table 7). Thus, Spanish and Italian assessed the four UMIs equally, the OCD-related were more dysfunctionally appraised by the Portuguese, the Iranian and Israeli assessed the IAD intrusions, and the Turkish assessed both OCD intrusions more dysfunctionally, and the Turkish assessed both the OCD and IAD intrusions more dysfunctionally. On the whole, participants in all countries made the least dysfunctional appraisals of the BBD and the EDs-related intrusions.

The use of control strategies to manage the four UMIs differed across the countries (Table 8). Thus, the Spanish, Portuguese, and Israeli participants used more control strategies when experiencing IAD intrusions than when experiencing EDs intrusions. In the middle were the OCD and BDD intrusions, which instigated similar control strategies. Similarly, Turkish participants used more strategies to control OCD, BDD, and IAD intrusions, compared to their low use to manage EDs-related intrusions. By contrast, Iranians, Italians, and Argentinians used similar strategies to keep all four UMIs under control, regardless of their content.

Finally, interaction effects were found between the consequences of each UMI content and the sample location on the emotional impact (F(17,146, 1677)= 2.15; p ≤ .05; η²=.022), interference (F(17,69, 1713)= 2.76; p ≤ .01; η²=.02), egodystonicity (F(17,21, 1675)= 3.52; p ≤ .01; η²=.03), dysfunctional appraisals (F(17,88, 1717)= 2.79; p ≤ .01; η²=.02), and control strategies (F(17,64, 1664)= 2.45; p ≤ .01; η²=.02), although in all cases with small effect sizes.

Discussion

The current study aimed to examine the maladaptive consequences of obsessive, dysmorphic, illness, and eating-disorders related UMIs in individuals from different countries and socio-cultural contexts. Up to 41% of the participants experienced the four most upsetting UMIs in the past three months, supporting the universality of normal unwanted mental intrusions with contents typically related to OCD, BDD, IAD, and EDs. According to cognitive-behavioral models, in all the locations the disturbing UMIs had negative consequences. They caused emotional distress and were

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Table 6 Differences in the egodystonicity caused by unwanted mental intrusions across countries and among four contents of intrusions.

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|--------------------|-------------|-------------|-------------|-------------|
| Argentina          | 1.41 (0.24) | 1.12 (0.21) | 0.35 (0.22) | 1.06 (0.21) |
| Iran               | 1.61 (0.38) | 0.92 (0.33) | 1.30 (0.35) | 1.38 (0.33) |
| Israel             | 1.25 (0.22) | 1.35 (0.19) | 1.74 (0.20) | 1.12 (0.19) |
| Italy              | 0.85 (0.16) | 0.67 (0.14) | 0.67 (0.15) | 0.82 (0.14) |
| Portugal           | 1.09 (0.11) | 1.12 (0.09) | 1.34 (0.10) | 1.21 (0.09) |
| Spain              | 1.40 (0.13) | 1.39 (0.11) | 1.39 (0.12) | 1.67 (0.11) |
| Turkey             | 1.24 (0.10) | 0.82 (0.09) | 0.88 (0.09) | 0.71 (0.09) |

Note. Data are Mean (SD). Values which share the same superscript were not significantly different from each other. Superscripts a, b, c indicate post-hoc within-group (UMIs content) differences. Superscripts 1, 2, 3 indicate post-hoc between-groups differences (countries). Same superscript means no differences.

Table 7 Differences in the dysfunctional appraisals about unwanted mental intrusions across countries and among four contents of intrusions.

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|--------------------|-------------|-------------|-------------|-------------|
| Argentina          | 1.66 (0.15) | 1.32 (0.17) | 1.08 (0.17) | 1.39 (0.17) |
| Iran               | 1.83 (0.24) | 0.88 (0.27) | 2.19 (0.27) | 1.44 (0.27) |
| Israel             | 1.45 (0.13) | 1.43 (0.15) | 1.68 (0.15) | 1.18 (0.15) |
| Italy              | 1.22 (0.10) | 1.05 (0.11) | 1.14 (0.11) | 0.99 (0.11) |
| Portugal           | 2.05 (0.07) | 1.77 (0.07) | 1.84 (0.07) | 1.77 (0.08) |
| Spain              | 1.83 (0.08) | 1.72 (0.09) | 1.79 (0.09) | 1.74 (0.09) |
| Turkey             | 1.70 (0.06) | 1.45 (0.07) | 1.69 (0.07) | 1.34 (0.07) |

Note. Data are Mean (SD). Values which share the same superscript were not significantly different from each other. Superscripts a, b, c indicate post-hoc within-group (UMIs content) differences. Superscripts 1, 2, 3 indicate post-hoc between-groups differences (countries). Same superscript means no differences.
interfering, egodystonic, and dysfunctionally appraised, and individuals deployed a variety of strategies to control them. These results coincide with previous studies of OCD intrusions (e.g., Clark et al., 2014; Moulding et al., 2014), suggesting that the general mechanisms and/or processes posited by the current cognitive-behavioral models about the critical role of UIMs in explaining the genesis of OCD, BDD, IAD, and EDs are not dependent on cultural diversity, as shown cross-cultural similarities on OCD symptom presentations, like contamination fears that resulted in washing compulsions (Williams et al., 2017).

Nevertheless, as expected, our data also reveal subtle differences across countries, suggesting that the cultural background influences the way individuals react to and interpret the different UMI contents. Overall, Spanish and Portuguese participants experienced the most maladaptive consequences when they had UIMs, whereas Italian reported the least. At the midpoint were Turkish and Iranian, although they were closer to the Spanish and Portuguese, whereas Israelis and Argentinians were closer to the Italian participants. The fact that individuals from each country did not experience the same rate of the four UIMs suggest that the tendency to experience more disturbing UIMs, as it occurred in Turkish, Portuguese, and Spanish participants, are due to the worst way (i.e., emotions, appraisals, etc.) in which individuals from these countries respond to their UIMs. This general pattern is consistent with the one reported by Pascual-Vera et al. (2019) when examining the general frequency and disturbance caused by OCD, BDD, IAD, and EDs-related intrusions. The authors found that Iranian and Turkish participants reported the highest frequency of UIMs, and Spanish and Portuguese experienced the highest discomfort, whereas Israelis, Italians and Argentinians reported the lowest rates of both frequency and discomfort. The similarities found among participants from different countries might be influenced by different factors, such as sharing cultural and historical factors related to geographical location (i.e., Spain and Portugal), the rather strict observance of religion and values (Christian Catholicism in Spain and Portugal, and Islam in Iran and Turkey), and the role of migration movements of Italians and Israelis to Argentina, which were specially relevant at the end of the 19th century for Italians (Sergi, 1983) and across the first four decades of the 20th century for Jewish people. Nonetheless, the low rates of UIMs endorsed by Italian participants compared with both Spanish and Portuguese individuals were an unexpected result, because the three mentioned countries share Catholic religion and traditions. The age of Italian participants, who were younger than Spanish and Portuguese, could explain these results. The fact that Turkish participants use strategies to neutralize or control UIMs more is consistent with the differences observed between Canadian and Turkish students in terms of the greater use of control efforts by Turkish to manage OCD-related intrusions (Yorulmaz et al., 2010). In sum, our results suggest that, although cognitive models of disorders in which UIMs play a substantive role can be relatively independent of the socio-cultural background, identifying cultural factors (e.g., religious- and migration-related), might be important in implementing more accurate assessments and treatments that consider these factors.

Regarding the contents of the intrusions, the IAD-related caused the highest emotional impact, the OCD-related were the most interfering, and these two intrusive contents were the most dysfunctionally appraised, whereas the BDD and EDs-related intrusions interfered less and were appraised less dysfunctionally. Additionally, participants used thought-control strategies less when they experienced EDs-related intrusions. The findings are similar to the ones reported by Pascual-Vera and Belloch (2018b), and they suggest that having intrusions related to "fear for one’s/s’ others’ safety", as in obsession-like and health and death-related intrusions, are more easily interpreted as personally threatening, regardless of the cultural background, than intrusions related to physical appearance. The fact that EDs intrusions were the least interfering and instigated fewer control and/or neutralizing behaviors could indicate that both Western and non-Western societies have normalized the experience of having disturbing thoughts and images related to appearance, thinness, or dieting. Cultural beliefs and attitudes related to the idealization of a particular body type and a thin physical appearance, and the subsequent dissatisfaction with one’s figure, have been identified as a factor leading to the development of EDs (e.g., Eli, 2018; Miller & Pumariega, 2001). However, these results might be modulated by the characteristics of our study sample: up to 80% of the participants were young women with university studies. The influence of a culture of thinness in patriarchal societies is

| Location of sample | OCD-related | BDD-related | IAD-related | EDs-related |
|--------------------|-------------|-------------|-------------|-------------|
| Argentina          | 1.37 (0.14) | 1.22 (0.14) | 1.02 (0.15) | 1.07 (0.13) |
| Iran               | 1.70 (0.22) | 1.52 (0.23) | 1.78 (0.25) | 1.40 (0.22) |
| Israel             | 1.37 (0.12) | 1.55 (0.12) | 1.67 (0.13) | 1.30 (0.11) |
| Italy              | 1.11 (0.09) | 1.03 (0.09) | 1.06 (0.10) | 0.99 (0.09) |
| Portugal           | 1.53 (0.06) | 1.48 (0.06) | 1.63 (0.07) | 1.40 (0.06) |
| Spain              | 1.55 (0.07) | 1.55 (0.07) | 1.74 (0.08) | 1.48 (0.07) |
| Turkey             | 1.83 (0.05) | 1.71 (0.05) | 1.80 (0.06) | 1.38 (0.05) |

Note. Data are Mean (SD). Values which share the same superscript were not significantly different from each other. Superscripts a, b, c indicates post-hoc within-group (UMIs content) differences. Superscripts 1, 2, 3 indicate post-hoc between-groups differences (countries). Same superscript means no differences.
probably predominant in all the countries in this study (Hesse-Biber et al., 2006). To further investigate this possibility, future studies may benefit from integrating feminist and transcultural theories when examining the occurrence of culture-based syndromes, such as are at least in part the EDs (Miller & Pumariaga, 2001).

The present study has several limitations that could affect the interpretation of the results. First, our samples were dissimilar in size and small in the case of Iran, Israel, and Argentina. Although we collected a large representative sample, in this study we only included participants who had recently experienced the four most upsetting UMI s. Nonetheless, it is important to note that our findings are related to UMI s about each content individuals selected as the most disturbing one experienced recently, which makes these intrusions closer to those clinically significant experienced by individuals with OCD, BDD, IAD, and EDs. The age variability across countries and the fact that participants were mainly women with university studies is another limitation. Further studies are needed to guarantee the representativeness of the results. Another limitation was the possible bias associated with the use of a retrospective self-report questionnaire that might over- or underestimate the UMI s experience because UMI s can be difficult to distinguish from other cognitive products, such as ruminations, automatic thoughts, or worries (Inozu, Haciomeroglu, Keser, Akin-Sari, & Özmener, 2021). We tried to control these difficulties by designing the QUIT on the basis of previously validated self-report measures.

In conclusion, the occurrence of UMI s typically related to OCD, BDD, IAD, and EDs is not restricted to a specific culture or socio-cultural context, although these intrusions differ in their expressive phenomenology (i.e., contents, prevalence, frequency, and discomfort rates) and in the maladaptive consequences linked to them (Pascual-Vera et al. (in press)). Our findings suggest that cognitive models of disorders such as OCD, BDD, IAD, and EDs, although seem to be relatively free of cultural influences, should incorporate social and culturally-relevant constructs that would allow to make culturally-specific predictions to increase the understanding of the role of culture and associated values and beliefs in the expression of UMI s and their associated consequences. The role of cultural factors, such as migration movements, religion or gender values, might be behind these cultural variations, but we cannot rule out the influence of more specific variables, as the age is, in our findings. Future studies should examine the weight of social context-based factors to increase the understanding of the role of culture and associated values and beliefs in the expression of UMI s and their associated consequences, as well as the influence that the specific emotional and/or affective state of respondent has on the results.

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