Connecting and feeling: Associations between social factors and emotions in nine countries

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We aimed to explore the distribution of positive and negative emotions across nine low-, middle- and high-income countries; and the association between social factors and these emotions. Data were drawn from the SAGE and the COURAGE studies, with 52,553 participants. Emotions were assessed through the day reconstruction method.Sociodemographic characteristics and social factors were also measured. Multiple linear regressions were performed. Finland, China and African countries showed significantly lower scores on the negative emotions, whereas positive emotions were more homogeneous across countries. Loneliness was positively associated with negative

emotions and negatively associated with positive ones; frequent social participation was related with higher scores in positive emotions; and lower trust with higher levels of feeling rushed, irritated, depressed and less calm. The extent to which each emotion was felt varied across countries, but there seems to exist an association of social factors with the emotions.

Keywords: Emotions; Wellbeing; Social factors; Loneliness; Population-based samples.

Over the last decade, the attention to the use and measurement of subjective wellbeing (SWB) has increased considerably. SWB is a construct of interrelated phenomena that includes emotional responses to life events, domain satisfaction and global judgements of life satisfaction. One measure of SWB, experienced wellbeing, refers to the positive and negative emotions that people experience daily, such as happiness, enjoyment, frustration, depression, anger and worry (Miret et al., 2017).

One of the most comprehensive evaluations of experienced wellbeing across countries was carried out by the Gallup World Poll in 2017, which analysed 147 countries (Gallup World Poll, 2018). The results showed that Latin American countries scored higher across the positive emotions (e.g., enjoyment). The authors suggested that this could partly reflect the cultural tendency in these regions to focus on life's positives. In contrast, Central African Republic and South Sudan had the highest scores on negative emotions (e.g., worry, stress or sadness), probably due to the active conflicts in those countries. Furthermore, results from the 2015 European Social Survey also showed that experiential wellbeing varies across countries (European Social Survey, 2015). Using up to 35 daily life assessments of emotional wellbeing, momentary effects and solitude across participants from Canada and China, Jiang et al. (2019) found out that older adults of East Asian heritage experienced more positive and less negative emotions when alone than did Caucasians.

Social aspects such as loneliness, social cohesion and social relations are important determinants of SWB in general and might also be of specific emotions. Loneliness has been depicted as a growing and pressing issue in recent years in relation to SWB, with data showing that loneliness was associated with poorer experiential wellbeing (Shankar et al., 2015). Social cohesion, which is a key component related to social relations and networks, social and political trust, tolerance, civic engagement, participation and the absence of conflicts, generates better psychological functioning and enhances happiness, SWB and life satisfaction (Delhey & Dragolov, 2016).

Rodríguez-Pose and Von Berlepsch (2014), using data from 25 European countries, showed that social capital (i.e., trust, social interaction and norms and sanctions), was a relevant driver for happiness. Individuals with social support, those who participate in volunteering activities and those with high levels of social trust, generally report higher positive feelings than individuals with no social support, less civic engagement and lower social trust. Integration into socially supportive relationships benefits SWB because it reduces stress during adverse life events and improves coping (Ellwardt et al., 2019).

Nonetheless, there is still a need to study the relationship between diverse social factors and emotions. In fact, most studies on SWB focused on evaluative measures, such as overall life satisfaction or fulfilment (Krueger, 2009). Moreover, some authors argue that experienced wellbeing has been poorly operationalised, with some measures mixing different components of SWB and the majority focusing on the sum of positive and negative affect (Möwisch et al., 2019). Studies that perform a more nuanced analysis and include a broader range of specific emotions are needed. This could provide a better understanding of the phenomena complementing previous studies. Most previous studies were country-specific and conducted in high-income countries. It is important to analyse emotional expressions of emotions across different cultures and contexts, as SWB relates with culture and different values (Durand, 2013). On the other hand, although SWB is indeed influenced by culture, recent data showed that differences across nations are largely explained by similar life circumstances all over the world (Helliwell & Barrington-Leigh, 2010). Most of the previous studies used data from Western countries, did not include country comparisons, and considered the association between diverse social factors and global summaries of emotions such as composite scores of positive or negative effect or a global score of experienced wellbeing. Therefore, our study aims to: (a) explore the distribution of emotions using nationally representative data from nine countries; and (b) investigate the association between specific social aspects and several emotions. We hypothesize that there would be: (a) different levels of positive and negative emotions depending on the country, as a result of social, economic and cultural differences; and (b) significant associations between the diverse social aspects and emotions, independently of the countries.

METHOD

Procedure

Data were collected as part of the World Health Organization's (WHO) Study on global AGEing and adult health

(SAGE) wave 1 (Kowal et al., 2012) and the Collaborative Research on Ageing in Europe (COURAGE in Europe) (Leonardi et al., 2013). In both studies, a multistage clustered sampling design was used to generate nationally representative samples of the non-institutionalised adult population (aged 18+ years), randomly selected from the census of each country. Both surveys followed the same protocol to collect information on social characteristics and SWB. Both studies were approved by the ethics committees of each study country. Person-level analysis weights were calculated for each country. They included sample selection and a post-stratification factor, which took advantage of the estimates provided by the national statistical offices of the respective countries.

Participants

SAGE included 42,469 participants and was conducted between 2007 and 2010 in China ($n = 14,811$), Ghana ($n = 5108$), India ($n = 11,230$), Mexico ($n = 2742$), Russia ($n = 4355$) and South Africa ($n = 4223$). COURAGE in Europe was conducted between 2011 and 2012, including 10,800 individuals from Finland ($n = 1976$), Poland ($n = 4071$) and Spain ($n = 4753$). All the participants signed an informed written consent prior to the participation in the study. At the time of data collection, SAGE countries were categorised as low- and middle-income countries, while those from COURAGE were high-income countries according to the Word Bank index (2022). One adult (18 +) person was randomly selected to participate in each household, but in the case of SAGE study, for the sample aged 50+, all the people in the house aged 50+ were invited to participate. The current study included participants who answered the questions about SWB, regardless of whether they were living in the same household.

Individuals aged 50+ and 80+ years were oversampled, as the surveys focused on the ageing population. The response rate ranged from 51% (Mexico) to 93% (China).

Lay interviewers, who participated in a training course for the administration of the survey, conducted face-to-face structured interviews at participants' homes, using Computer-Assisted Personal Interviewing (CAPI). Quality control procedures were undertaken during the fieldwork.

In case, a participant was not able to respond to the interview due to severe cognitive or physical limitations, a shorter interview that did not include items related to SWB was administered to a proxy respondent. The sample used in this analysis included participants who answered the questions about SWB, totalling 52,553 people (10,457 from COURAGE and 42,096 from SAGE).

Table 1 shows the sociodemographic characteristics overall and by country. Overall, mean age was 58.2 ($SD = 15.3$) with more women (57.1%) than men (42.9%).

Both studies implicated in the present research (SAGE and COURAGE projects) were approved by the ethics committees of each study country.

Instruments

Emotions were assessed through an abbreviated version of the day reconstruction method (DRM), which showed adequate psychometric properties regarding reliability and construct validity in all countries (Ayuso-Mateos et al., 2013). This instrument evaluates affective experiences, both positive and negative and provides information about participants' daily activities. Individuals were asked to systematically rebuild their previous day's activities, their duration and the emotions linked to them. They were also asked to report on their experience of seven emotions: worried, irritated or angry, rushed, depressed, tense or stressed, feeling calm or relaxed and enjoyment. The SAGE questionnaire had a 3-point response scale ($1 = $ *not at all*, $2 = $ *a little* and $3 = $ *very much*), while the COURAGE scale ranged from 0 (*not at all*) to 6 (*very much*). The summed scores were then transformed into a 0–100 scale, with higher values indicating higher level of each emotion.

The following social characteristics were included in this study. A dichotomous loneliness variable (i.e. presence or absence of loneliness) was established by means of a single item ("Did you feel lonely for much of the day yesterday?").

Participation in society was assessed by asking about participation in social or religious activities and was created from three items ("How often in the last 12 months have you … attended any group, club, society, union or organizational meeting?; … attended religious services (not including weddings and funerals)?; and … gotten out of the house/your dwelling to attend social meetings, activities, programs or events or to visit friends or relatives?"). The original response scale was "never," "once or twice per year," "once or twice per month," "once or twice per week," and "daily." The variable was dichotomized for analysis: "never" and "once or twice per year" were considered as "never or rarely," while the other options were categorised as "frequently."

Trust was assessed with two items: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?," with answers "can be trusted" or "can't be too careful"; and, "Do you have someone you can trust and confide in?," with answers "yes" and "no." The variable was dichotomized for analysis and participants were considered to trust others if they answered both items positively.

A variable labelled "living alone," was derived from the enumeration of the people living in the respondent's

TABLE 1
Sociodemographic and social characteristics, by country and overall

	China	India	Mexico	Russia	South Africa	Ghana	Finland	Poland	Spain	Total
Age (mean) (SD)[a]	60.53	49.97	63.66	62.36	60.29	60.19	59.27	57.62	60.44	58.16
	(11.91)	(16.76)	(14.29)	(13.03)	(12.36)	(14.06)	(16.38)	(18.21)	(16.24)	(15.31)
Women	53.41	61.40	61.71	64.41	57.47	49.40	57.44	60.26	54.74	57.14
Marital status										
Never married/cohabiting	1.92	5.65	9.52	4.17	15.72	2.89	14.43	16.65	14.31	7.06
Separated/widowed	14.59	16.77	27.00	38.72	31.24	36.12	23.02	27.86	25.84	23.31
Married/cohabiting	83.49	77.58	63.48	57.11	53.04	60.99	62.55	55.49	59.85	69.63
High household income[b]	41.11	44.27	39.82	43.43	42.04	40.93	38.29	32.87	39.39	41.19
Educational level										
Less than primary	38.75	55.68	54.00	2.64	54.76	60.66	1.04	3.54	28.92	38.46
Primary	19.66	15.30	22.54	7.31	20.48	12.65	12.19	22.85	27.48	17.93
Secondary	36.20	23.10	14.38	69.92	19.97	22.98	52.80	53.83	30.22	34.03
Tertiary	5.39	5.92	9.08	20.13	4.79	3.71	33.97	19.78	13.38	9.58
Disability (mean)	8.22	22.32	17.06	20.42	17.66	20.70	7.98	17.13	10.85	15.53
(SD)	12.65	19.23	18.61	19.13	19.79	19.63	13.74	21.41	17.78	18.51
Loneliness[c]	4.39	14.59	13.06	9.97	13.92	7.83	3.55	6.53	8.11	9.31
Frequent participation[c]	39.74	45.25	55.20	49.68	90.85	93.65	85.08	76.79	59.10	48.30
Trust[c]	85.48	51.62	32.16	27.32	15.90	52.07	77.15	16.64	25.04	55.77
Living alone[c]	5.88	0.85	0.75	21.92	9.43	6.31	26.75	12.42	15.69	7.78

Note: Values are percentages unless otherwise indicated. [a] *SD*. [b] Household income was dichotomized into "low income," that includes the three lowest quintiles, and "high income," that includes the highest two. [c] Weighted variables.

household and was categorised as living alone versus living with someone.

Marital status was categorised as "never married/never cohabiting," "separated/divorced/widowed," and "married/cohabiting."

Sociodemographic characteristics included gender, age (in years), country of residence and educational level ("less than primary," "primary," "secondary," and "tertiary").

Household income was categorised into quintiles within each of the countries. The variable was dichotomized for analysis into "low income," which includes the first three quintiles, and "high income," which includes the last two.

The 12-item World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) (Üstün et al., 2010) was used to assess health and disability, with 0 indicated the best functioning ability (least disability) and 100 indicated the lowest functioning ability (highest disability).

Data analysis

Descriptive analyses of the data were conducted to characterise the study sample overall and by country, and included proportions, means and *SD*. ANOVAs with Bonferroni correction were carried out to analyse differences in mean estimates of emotions across countries.

Multiple linear regression analyses were conducted to determine the association between each of the selected emotions and the various social characteristics, considering all countries and adjusting for all the above-mentioned covariates. Non-standardised coefficients and confidence intervals (CI) were constructed at the 95% CI level. Random-effects meta-analyses were carried out to assess the between-country heterogeneity that might be expected in the relationship between the social variables that were consistently associated with the emotions. Data were weighted to account for the sampling design in each country and to generalise the study to the reference population. Individual-level analysis weights were calculated, including sample selection and post-stratification factors for each country. Post-stratification corrections were made to the weights to adjust for non-response and for the population distribution obtained from the national census from each country. The analyses were performed in Stata, version 14 and R 3.6.1.

RESULTS

Figure 1 shows the mean estimates of the presence and type of emotions for all countries. Mean estimates of negative emotions varied across countries. China showed the lowest score for each negative emotion (e.g., worry: mean 1.9, 95% CI 1.4, 2.3; irritation: mean 1.9, 95% CI 1.5, 2.4), while Spain and Mexico had the highest scores. By contrast, means of positive emotions appeared to be more homogeneous across countries, even if there were some differences among them. For instance, South Africa had the highest score for feeling calm (mean: 83.8; 95% CI: 80.5, 87.2), followed by Spain (mean: 81.6; 95% CI:
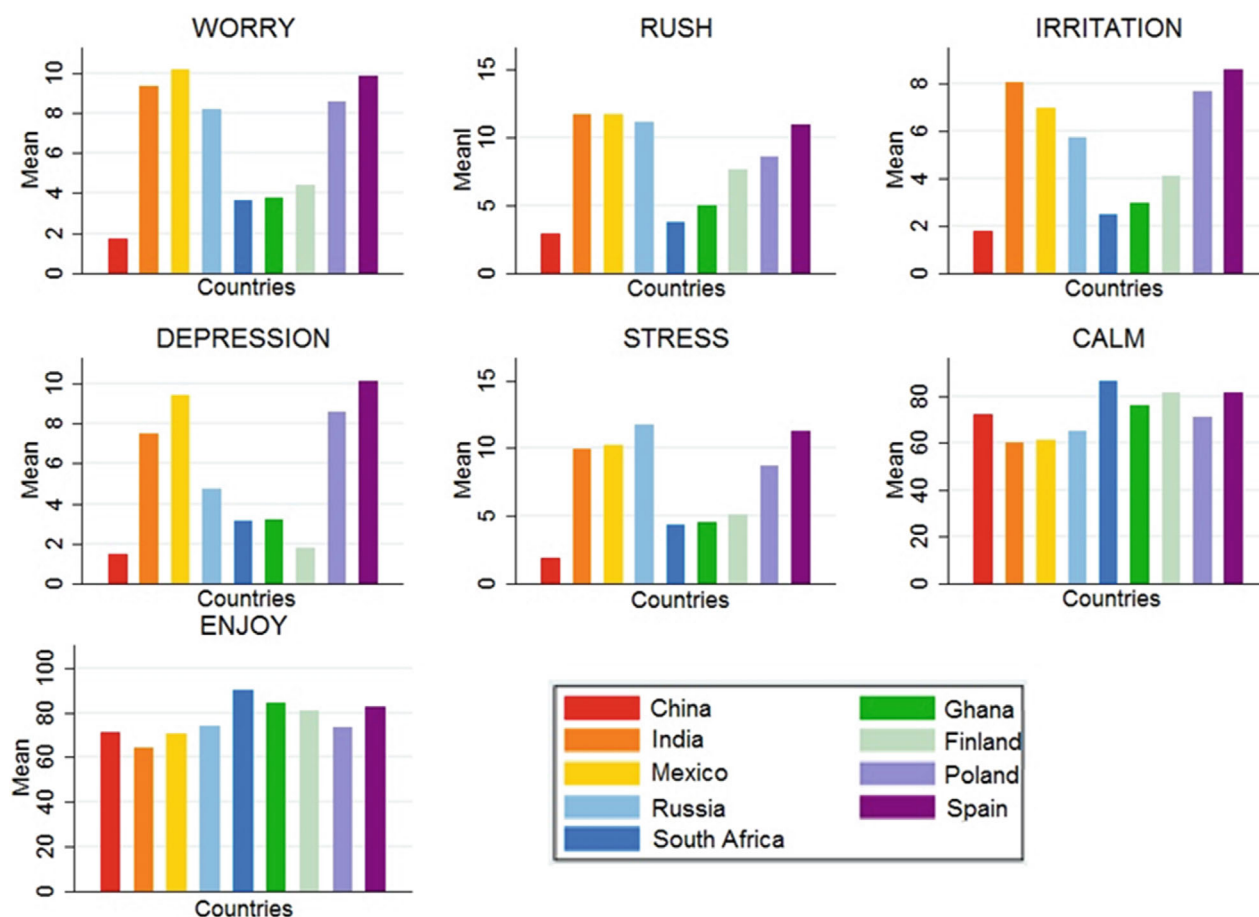
Figure 1. Mean of emotions in each country. Higher scores represent higher mean estimates. Mean values for emotions significantly differ across countries ($p < .001$), except for worry and stress between India and Mexico, South Africa with Ghana and Finland, Spain/Mexico and Ghana/Finland; worry for Poland with Russia and India and Spain with India and Mexico; rush between India, Mexico and Russia, Finland/Poland, South Africa/China and Spain with India, Mexico and Russia; irritation for South Africa with Ghana and China, Poland with India and Mexico and Spain/India; depression between Ghana/South Africa, Finland/China and for Mexico with Poland and Spain; stress for Spain/Russia; calm between India/Mexico and China with Poland and Spain; enjoy for China with Mexico and Spain and Poland/Russia.

80.7, 82.4), while Mexico had the lowest mean (mean: 57.7; 95% CI: 54.6, 60.9). In general terms, differences in emotions across countries were statistically different (please refer to Figure 1 for details).

Table 2 shows the results of the adjusted linear regression models exploring the association between social characteristics and emotions.

Loneliness was significantly associated with all the positive and negative emotions with coefficients ranging from −6.06 (enjoyment) to 8.10 (stress). The association was positive for all negative emotions whereas it was negative for the positive ones.

Participation was associated with both feeling calm ($B = 2.50$, $p = .002$) and enjoyment ($B = 2.75$, $p < .001$), participants living alone were more likely to report feeling depressed ($B = 1.27$, $p = .013$). Individuals trusting others showed significantly lower feelings of rush ($B = −1.73$, $p < .001$), irritation ($B = −1.34$, $p = .001$) and feelings of depression ($B = −0.91$, $p = .006$), while the opposite

association was found for feeling calm ($B = 2.61$, $p = .002$). Being married or living with a partner was associated with more worry, feeling rushed and depression and less enjoyment than having never been married or having never lived with a partner.

As loneliness was significantly associated with all emotions, we further explored these associations for each country independently (Figure 2). Overall, the effect of loneliness remained significant, except for a few exceptions. The overall estimate between loneliness and worry was 7.76. Mexico, Russia, South Africa and Finland did not show significant associations between loneliness and rush while the rest of countries did. The negative effect of loneliness on irritation was higher in China, Finland and Poland. Country-wise results also showed that loneliness was positively associated with depression with an overall estimate of 8.15 (95% CI = 5.30–11.01). Loneliness was also significantly associated with stress in all countries (8.08). The graphics showed similar patterns

TABLE 2
Linear regression models exploring the association between social characteristics and emotions, considering all countries

	Worry Coef. (95% CI)	Rush Coef. (95% CI)	Irritation Coef. (95% CI)	Depression Coef. (95% CI)	Stress Coef. (95% CI)	Calm Coef. (95% CI)	Enjoy Coef. (95% CI)
Loneliness (ref. no)	**7.76 (5.95, 6.66)**	**6.03 (4.14, 7.92)**	**5.88 (4.15, 7.61)**	**7.10 (5.41, 8.80)**	**8.10 (6.18, 10.03)**	**−5.22 (−7.91, −2.53)**	**−6.06 (−8.85, −3.27)**
Participation (ref. rarely)	−0.12 (−0.77, 0.51)	0.26 (−0.63, 1.15)	0.09 (−0.57, 0.75)	0.41 (−0.12, 0.93)	0.77 (−0.01, 1.55)	**2.50 (0.95, 4.04)**	**2.75 (1.25, 4.25)**
Trust (ref. no)	−0.52 (−1.28, 0.23)	**−1.73 (−2.66, −0.80)**	**−1.34 (−2.13, −0.56)**	**−0.91 (−1.55, −0.26)**	−0.83 (−1.70, 0.04)	**2.61 (0.97, 4.24)**	1.34 (−0.26, 2.95)
Living alone (ref. no)	0.55 (−0.88, 1.97)	−0.54 (−2.31, 1.22)	0.51 (−0.66, 1.69)	**1.27 (0.27, 2.27)**	0.44 (−1.18, 2.06)	0.49 (−2.44, 3.43)	−1.17 (−3.86, 1.51)
Household income (ref. low income)	−0.18 (−0.84, 0.48)	−0.39 (−1.25, 0.46)	−0.27 (−0.95, 0.40)	0.01 (−0.56, 0.56)	−0.06 (−0.83, 0.70)	**3.43 (1.93, 4.93)**	**3.28 (1.79, 4.76)**
Gender (ref. male)	0.45 (−0.19, 1.09)	0.48 (−0.35, 1.31)	−0.37 (−1.01, 0.28)	−0.33 (−0.86, 0.20)	−0.67 (−1.43, 0.08)	−0.11 (−1.63, 1.42)	0.27 (−1.21, 1.74)
Educational level (ref. less than primary)							
Primary	**−1.29 (−2.25, −0.34)**	−0.24 (−1.53, 1.04)	−0.71 (−1.63, 0.21)	−0.61 (−1.54, 0.33)	**−1.13 (−2.25, −0.00)**	0.51 (−1.58, 2.60)	1.42 (−0.63, 3.47)
Secondary	**−1.26 (−2.13, −0.39)**	**−1.24 (−2.30, −0.17)**	−0.51 (−1.32, 0.30)	−0.62 (−1.38, 0.14)	**−1.09 (−2.02, −0.16)**	1.84 (−0.05, 3.74)	**2.26 (0.37, 4.15)**
Tertiary	−0.63 (−1.82, 0.55)	**−2.50 (−4.02, −0.98)**	−0.81 (−1.95, 0.33)	−0.56 (−1.57, 0.45)	**−1.62 (−3.07, −0.18)**	0.70 (−2.27, 3.67)	**3.24 (0.53, 5.94)**
Marital status (ref. never married, cohabiting)							
Separated, widowed	1.45 (−0.21, 3.11)	0.89 (−1.38, 3.17)	0.09 (−1.43, 1.62)	**1.40 (0.18, 2.62)**	−0.56 (−2.54, 1.41)	−1.93 (−5.37, 1.51)	−2.97 (−6.22, 0.29)
Married, cohabiting	**1.40 (0.09, 2.71)**	**2.51 (0.94, 4.07)**	1.12 (−0.25, 2.48)	**1.20 (0.17, 2.24)**	0.74 (−0.81, 2.29)	**−2.45 (−5.03, −0.13)**	**−2.71 (−5.25, −0.17)**
Disability	**0.21 (0.18, 0.24)**	**0.16 (0.12, 0.19)**	**0.17 (0.15, 0.20)**	**0.21 (0.18, 0.23)**	**0.20 (0.17, 0.23)**	**−0.28 (−0.33, −0.23)**	**−0.26 (−0.31, −0.21)**
Age	**−0.10 (−0.13, −0.07)**	**−0.15 (−0.18, −0.11)**	−0.09 (−0.12, 0.07)	−0.07 (−0.09, 0.05)	−0.11 (−0.1, 0.08)	0.14 (−0.09, 0.19)	**0.16 (0.11, 0.22)**

Note: Models are mutually adjusted for all variables in the respective columns and countries. Disability (0−100) and age (18−114) are continuous variables. Significant values in bold.
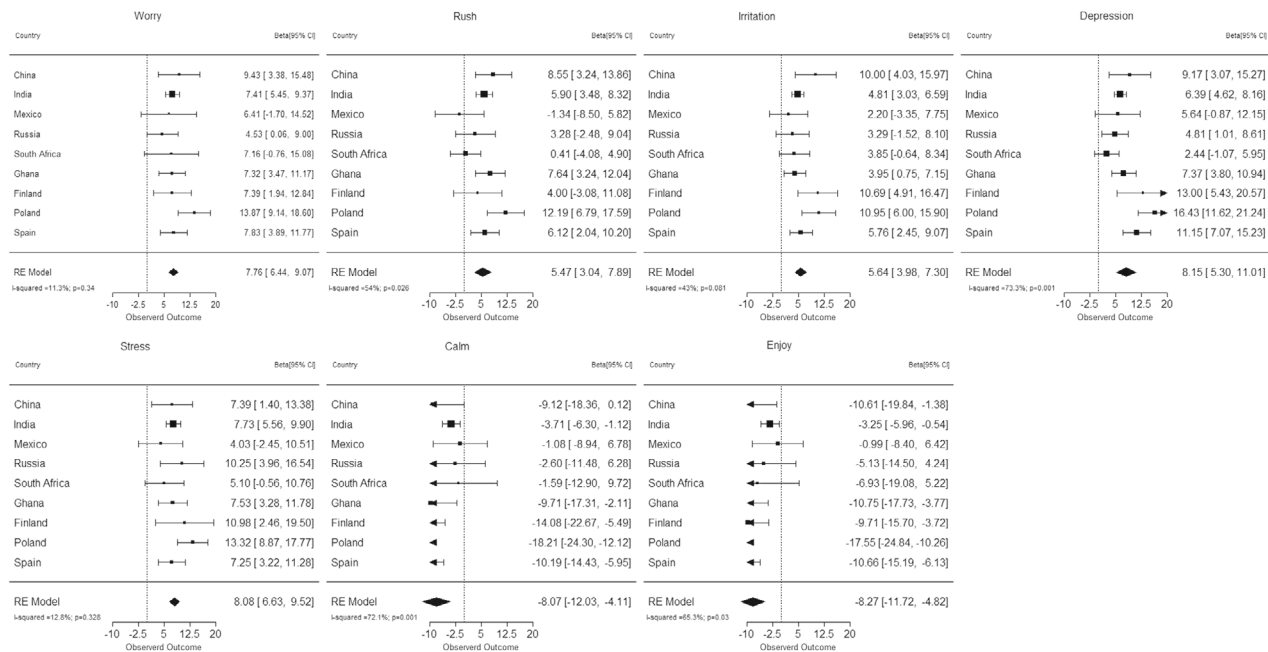
Figure 2. Countrywise association between loneliness and emotions. Estimates are adjusted for all social characteristics and covariates. The overall estimate was obtained by meta-analysis of random effects.

regarding the positive emotions: in European countries together with Ghana loneliness showed a negative significant effect on calm and enjoy, whereas Mexico, Russia and South Africa did not reveal any significant association.

Overall, there was a significant moderate to high level of between-country heterogeneity in more than half of the associations (I^2 from 73.3% for depression to 54% for rush), except for irritation ($I^2 = 43\%$), stress ($I^2 = 12.8\%$) and worry ($I^2 = 11.3\%$), for which the Cochran Q test was not significant ($p > .05$).

DISCUSSION

The present study analysed the associations between various social characteristics and several positive and negative emotions across nine countries with different income levels and population profiles. Mean estimates of positive emotions resulted more homogeneous, while mean estimates of negative emotions varied more across countries. Loneliness was consistently associated with all the emotions, whereas participation, trust, living alone and marital status were associated with some of them.

The first hypothesis assumed that there would be different levels of positive and negative emotions depending on the country of origin, as a result of social, economic and cultural differences. That was corroborated: as reported previously, wealthy nations are likely to score higher on human rights, equality, longevity and democratic governance, which might account for the strong

relation between income and SWB of societies (Diener et al., 2003). Nevertheless, our results suggest that, even if the welfare state appears to be relevant to SWB, other variables are important as well.

China and Finland reported the lowest levels of all negative emotions, followed by the two African countries, Ghana and South Africa. On the other hand, the two Spanish-speaking countries—Spain and Mexico—had the highest means for negative emotions. Means of positive emotions were similar across countries, with the highest score for South Africa both for calm and for enjoyment. Our findings are consistent with those of the Gallup World Poll (2018), where Latin American countries showed the highest positive and negative emotions worldwide, while Singaporeans were the least likely to report either positive or negative feelings on a daily basis. India was one of the countries with the most homogeneous means for all positive and negative emotions.

The differences among countries might also be partly due to the fact that individuals from different countries express their emotions differently. Culture influences emotions in various ways and constrains how emotions are felt and expressed in a given cultural context; it shapes the ways people feel in certain situations and express their emotions; and, even inside one society, the manifestation of emotions is different in relation to social background.

Emotions and their expression in Chinese culture, differs from other cultures in the lower frequency, intensity and duration with which emotions are typically experienced. In fact, there has been a long history of regarding emotions as pathogenic factors disturbing the normal

functioning of the body in Chinese tradition (Veith, 1972), discouraging the expression of emotions. On the other hand, as Chinese culture places great emphasis on a harmonious relationship in social interaction, individuals tend to avoid interpersonal conflict and maintain harmony, and they have a stronger normative system of emotional display rules than other groups (Fernández et al., 2000). In the same way, Nordic people, and the Finns in particular, appear to be emotionally reserved, and they rarely rank highly on expressions of joy or anger. This emotional introversion is an important part of the Finnish identity, the so-called *Sisu*, a Finnish word meaning a show of strength, stoicism and resilience (Leaver, 2018). Moreover, in a cross-cultural study from five African nations, including Ghana and South Africa, it was found that African social norms consider all negative emotions undesirable (Kim-Prieto & Eid, 2004). People from Latin America and from Spain have a more open emotional expression (Leaver, 2018). In the present results, India showed homogeneous means for all emotions, in the middle ranges in comparison to the other countries. It could be that, as religion seems to be so important, it influences the way people answer the questions about emotions, balancing more the negative and positive emotions, or that they may tend to link their personal feelings to those of the community.

In accordance with our hypothesis, loneliness appeared as a key social factor associated with all the emotions, with a moderate to high level of between-country heterogeneity. This might reflect a cultural influence in the way to perceive and express emotions: some emotions may be conceived in a similar way, while others may present different nuances of perception or interpretation. The effect of loneliness on emotions concurs with previous studies. For instance, a study found that individuals reporting feelings of loneliness experienced less intense positive emotions than less lonely individuals (Queen et al., 2014). Moreover, loneliness has been associated with poorer experiential wellbeing and depressive symptoms (Cacioppo et al., 2010). The emotion of depression in the present sample was found to be the most affected by the feeling of loneliness, especially among the European countries. The most striking result was that in Mexico, loneliness was not significantly associated with any emotion. A previous study revealed that in Mexico, the negative effect of loneliness on mental health was attenuated when there were social interactions and family support (Lena et al., 2019). In our study, only 0.75% of Mexican participants were living alone, which may somehow be related to the relevance of family ties in Mexico. The effect of loneliness may be thus culturally related. Higher loneliness was associated with lower positive emotions (calm and enjoy), especially in the three European countries and in Ghana. Finally, it is worth noting that in China means of negative emotions were low, but they seemed to be significantly influenced by loneliness, while means of positive emotions were higher, but no significative effect of loneliness was found. This could be in line with a previous research, suggesting that emotional support and less loneliness may play a stronger role in alleviating negative effect rather than in promoting positive emotions (Huxhold et al., 2013).

Our findings also showed that participation was associated with feeling calm and enjoyment but was not associated with negative emotions. Earlier studies have also found evidence of the importance of the activity diversity in increasing SWB, and of the benefits of social participation and social engagement for health (Lee et al., 2016).

Trust was associated with lower feelings of rush, irritation and depression and with more feelings of calm. Our results concur with other studies reporting that trust might create a sense of safety that promotes calm, fosters cooperation among individuals, maintains close relationships and leads to higher levels of perceived social support, all contributing to enhance SWB (Siedlecki et al., 2014).

Living alone was found to be significant only for feelings of depression. Comparing this result with the one of loneliness, we could hypothesize that it is the subjective experience of loneliness that impacts more on people's day-to-day emotions, rather than other objective measures (e.g., living alone).

Being married or living with a partner was associated with some negative emotions and less enjoyment. This finding seems to contrast with other studies that have shown that marriage can be rewarding and can have positive effects on SWB (Lee et al., 1991).

Even if differences across countries exist in the extent to which emotions are felt, the social aspects resulted relevant in all countries despite the cultural, economic and social gap among them. Loneliness was strongly associated with experiential wellbeing, as it was consistently associated with all the emotions. Other social factors could be also important, as humans are naturally made for social relationships and exchange.

Strengths and limitations

The strengths of this study include the use of nationally representative samples with different economic levels and social structures. Moreover, the DRM is a validated instrument that allows the examination of affective dynamics in everyday contexts, while other traditional approaches often assess trait-level differences in SWB (Möwisch et al., 2019). While many other multinational studies (e.g., the Gallup World Poll) conducted telephone-based interviews, we performed face-to-face interviews, which are associated with higher response rates, higher consistency of survey implementation across countries and higher data quality (Villar & Fitzgerald, 2017). The present study captured cultural differences

in the expression of emotions, as well as in the social aspects that could affect SWB and considered a variety of social aspects, while most of the previous research focused only on some specific characteristics—that is, loneliness, social isolation or living alone—and therefore were not able to analyse the influence of all the factors together.

Our study findings should nevertheless be interpreted in the light of several shortcomings. First, causal associations cannot be established due to the observational nature of this study. Second, loneliness, trust and participation were assessed without a validated scale. Moreover, loneliness was a state-level question, while the other social characteristics are related to long-term facts and feelings. However, it remains a useful measure to depict how much people feel lonely or perceive a deprivation of social contact, but surely a more comprehensive measure of loneliness is preferred. Third, even if we have transformed the scores of DRM into a 0–100 scale, we acknowledge that the response scale of this instrument was different for SAGE and for COURAGE in Europe. Finally, some circumstances might have changed both between the studies time frames, and between these and nowadays. Even if the World Bank (2022) did not report significant variations between the countries during the period these studies took place, it cannot be ruled out that some differences could be partly due to the economic, environmental or social changes that occurred in that gap of years. On the other hand, some countries changed from low- to middle-income countries from 2007 to 2022, and the socioeconomic characteristics and circumstances may have affected results in terms of temporality. Nevertheless, the relations between the social aspects and emotions are still valid and valuable. The work is meaningful to the current situation, as the literature on these topics is scarce when considering the influence of multiple characteristics in the same analysis and with such a large sample. However, it needs to be considered, on the one hand, that consequently to the recent covid-19 pandemic some data might have changed, and on the other hand, that most of the sample was 50 years and older, because SAGE and COURAGE were projects focused on ageing.

CONCLUSIONS

The results of this study revealed differences across countries in the extent to which emotions are felt, but the social aspects resulted relevant in all countries despite the cultural, economic and social differences among them. Loneliness was consistently associated with all the emotions. Social factors could be equally important in most of the countries, as humans are social beings made for social relationships and exchange.

Further studies are needed to infer causal relationships in the associations found in the present study. If such causal relationships were established, they could guide public policy design and the development and implementation of policy actions to promote experienced well-being in those culturally, economically and socially diverse countries. For example, to enhance social participation, it might be important to engage people in the community through volunteering, local decision-making groups, collective actions and facilitating access to leisure activities as well as to social support. Ensuring social relationships could also imply a solution for the feelings of loneliness, trying to avoid social isolation. A goal could be to build a national conversation on loneliness, to raise awareness of its impacts and facets, to acknowledge it and to understand the importance of also looking after mental health and social connections, as key for SWB. This could help improve people's resilience by ensuring they have the necessary social support, even during vulnerable moments in their lives.

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