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Abstract

The current study uses data from The BBC Loneliness Experiment to explore the social stigma of loneliness and how it varies by gender, age, and cultural individualism. We examined stigmatizing judgements of people who are lonely (impressions of those who feel lonely and attributions for loneliness), perceived stigma in the community, and self-stigma (shame for being lonely and inclination to conceal loneliness), while controlling for participants' own feelings of loneliness. The scores on most measures fell near the mid-point of the scales, but stigmatizing perceptions depended on the measure of stigmatization that was used and on age, gender, and country-level individualism. Multi-level analyses revealed that men had more stigmatizing perceptions, more perceived community stigma, but less self-stigma than women; young people had higher scores than older people on all indicators except for internal vs external attributions; and people living in collectivist countries perceived loneliness as more controllable and perceived more stigma in the community than people living in individualistic countries. Finally, young men living in individualistic countries made the most internal (vs. external) attributions for loneliness. We discuss the implications of these findings for understandings of loneliness stigma and interventions to address loneliness.

Keywords

Stigma, loneliness, loneliness stigma, age, gender, individualism, culture

Exploring the Nature and Variation of the Stigma Associated with Loneliness

In June 2019, the then UK Loneliness Minister Mims Davies launched a campaign with the explicit aim of tackling the stigma of loneliness. As was the case with other campaigns around the world (e.g., in the US: 'Far From Alone' and 'Commit to Connect'), this campaign reflects the recognition that the stigma of loneliness is problematic, because it can (1) worsen the experience of being lonely, and (2) make it harder to reach out to seek help, or to reconnect (Perlman & Peplau, 1981; Weiss, 1973). To address the stigma associated with loneliness, it seems crucial to understand what it might entail and how it might vary across socio-demographic characteristics. Since evidence addressing these issues is lacking, in the current paper we use data from the BBC Loneliness Experiment—including men and women ages 16-99 years, living in one of 237 countries, islands, and territories—to examine a range of perceptions that are relevant to the understanding of the stigma associated with loneliness, and explore how it might be shaped by gender, age, and cultural individualism.

What do we Know About the Stigma Associated with Loneliness?

Most definitions of loneliness converge on the idea that it is an aversive feeling that emerges when one's social relationships are unsatisfying, in quality or quantity (Perlman & Peplau, 1981). A social stigma, in turn, is a complex set of culturally shared beliefs that lead to the derogation and devaluation of specific attributes and discredit the individual bearing them (Goffman, 1963; Pescosolido & Martin, 2015). Social stigma is one way in which dominant members of society enforce their norms, ensuring people follow social norms and, if not, that they are excluded, or at least marginalized (Phelan et al., 2008). As such, the social stigma associated with loneliness corresponds to a constellation of beliefs that derogate and devalue

those who feel lonely, so as to encourage them to have appropriate standards for social connection and to fulfil those standards.

Past research in this area has shown that people who feel lonely are often described in negative terms. For example, the few papers that examined this issue—in North America—revealed that those who feel lonely are perceived to be socially inept, poorly adjusted, unlikeable, and generally incompetent (Borys & Perlman, 1985; Lau & Gruen, 1992; Tsai & Reis, 2009; Rotenberg et al., 1997; cf. Christensen & Kashy, 1998). A recent paper by Kerr and Stanley (2020) pointed out that past research in this area has typically confounded loneliness with poor social skills or behaviours, describing the people in the vignettes as both lonely and socially inept (e.g., Lau & Gruen, 1992). Kerr and Stanley (2020) argued that this is problematic because, though scholars used to believe that loneliness was the result of poor social skills and a preference for being alone (Jones et al., 1982), this is not supported by evidence. Indeed, people who report loneliness do not show a preference for being alone in their daily life (Queen et al., 2014), their social skills are at least as good as those of people who are not lonely (Gardner et al., 2005; Qualter et al., 2015), and they are sometimes even perceived as more friendly than non-lonely people (Christensen & Kashy, 1998; cf. Tsai & Reis, 2009). Crucially, Kerr and Stanley (2020)—also using a North American sample—manipulated loneliness in the absence of this confound and showed derogation of people feeling lonely only by college students, but no such stigmatizing perceptions among a more diverse community sample.

Going Beyond Impressions

Although negative impressions of individuals reporting loneliness are key to understanding loneliness stigma, stigma can be expressed and understood in other ways too. A

core distinction in the stigma literature is that between *endorsed* stigma (one's own stigmatizing views of an identity or attribute) and *perceived* stigma (i.e., the belief that a particular identity or attribute is stigmatized in society; e.g., Pescosolido & Martin, 2015). Impressions of those who feel lonely fall under the category of endorsed stigma. Other perceptions in this category would be internal and controllable *attributions* for loneliness (Crandall et al., 2001; Jones et al., 1984; Weiner, 1995). Though loneliness can be predicted by personality characteristics (which qualify as internal attributions), these associations tend to be of small to medium size (Bueckner et al., 2020b). Loneliness is strongly predicted by social determinants, such as changes in social networks due to life transitions (Buecker et al., 2020a), life circumstances (e.g. living alone, caring for a family member), socio-economic status, ethnic minority status, experiences with bullying, or discrimination, disability, unemployment, and living in a deprived area (Lasgaard et al., 2016; Matthews et al., 2019; Priest et al., 2017)—all of which are largely external and uncontrollable. As such, making largely internal or controllable attributions for loneliness neglects the range of structural, environmental, and cultural factors that drive feelings of loneliness (Batsleer et al., 2018; Matthews et al., 2019), which is stigmatizing and hinders appropriate targeting of social interventions.

In addition to stigma endorsement, to gain a more complete picture of the stigma associated with loneliness it is important to examine indicators of *perceived* stigma (Pescolosido & Martin, 2015). Participants in a study carried out in the UK expressed fear that if they were to come forward to seek help for their feelings of loneliness, they would be simply told to "pull themselves together" (Co-op Foundation and the British Red Cross, 2016). Another study, also in the UK, found that 81% of the young people surveyed cited fear of other people's reactions as a

barrier to speaking about loneliness (Co-op Foundation, 2019). These examples show that *perceived community stigma* contributes to norm enforcement by affecting the individual's behaviour.

Finally, the derogation of those who feel loneliness and or perceived community stigma enforces normative expectations about sociality by engendering *shame* in those who feel lonely, as well as by encouraging them *to conceal* from others that they feel lonely. In the UK, a report by the Mental Health Foundation (2010) showed that one third of the people surveyed said they would be embarrassed to say they felt lonely. Shame can even affect the extent to which people admit to feeling loneliness when asked in anonymous questionnaires. In fact, scores on quantitative measures of loneliness are significantly higher, especially for male respondents, when the questions do not directly refer to feeling lonely (Borys & Perlman, 1985).

In sum, to understand the stigma associated with loneliness, it is important to go beyond the examination of the impressions people form of those who feel lonely. We need to examine other ways in which stigma can be endorsed and expressed (attributions for loneliness), and how it can be perceived, i.e., whether people perceive there to be a stigma associated with loneliness in their community, and the shame and inclination to conceal loneliness that this might engender.

Predictors of the Stigma of Loneliness

Our goal, in this paper, is to explore how these stigma-related perceptions might be shaped by gender, age, and cultural individualism. As detailed, stigmatizing judgements target those who are perceived to endorse counter-normative attributes or behaviours (Goffman, 1963). In this vein, the stigma associated with loneliness is expected to exist because feeling lonely, or admitting to feeling lonely, would run counter to specific cultural beliefs about what is normal,

desirable, or acceptable for a particular demographic group and in a particular context. Might a respondent's gender, age, or individualism affect these beliefs?

How Might Gender Affect the Stigma of Loneliness?

A recent meta-analysis indicates that, overall, men and women experience loneliness to a similar extent across the lifespan (Maes et al., 2019). As such, loneliness is no more descriptively normative for either gender group. On the one hand, gender stereotypes encourage women to particularly value social connections, as well as to be well connected, which might motivate them to derogate lonely people to a greater extent than men, as well as to self-stigmatize more than men when feeling lonely. However, by encouraging men to care less about being socially connected, and generally to be more controlled and less emotional, gender stereotypes can motivate them to derogate lonely individuals more than do women, and to feel more shame when they feel the (for them counter normative) pain of disconnection. Evidence in this area is scarce and inconclusive. Classic research suggested that loneliness is more stigmatized by women than by men (Borys & Perlman, 1985; Lau & Gruen, 1992; Rotenberg & Kmill, 1992), but Kerr and Stanley's (2020) study found no effect of gender on stigmatizing perceptions.

Does Age Affect Loneliness Stigma?

To our knowledge, no studies to date have examined how age might affect loneliness stigma. Research before the COVID-19 pandemic (when this study was conducted) showed that loneliness is most prevalent precisely among young people (Barreto et al., 2020; ONS, 2018; Schultz & Moore, 1988) and, in some studies, again in older age (Lasgaard et al., 2016; Luhmann & Hawkley, 2016; Victor & Yang, 2012; cf. meta-analysis by Mund et al., 2020). If so, one could argue that loneliness is more normative, and therefore less stigmatizing, among

younger than older people. However, it is important to note that feelings of loneliness often remain hidden and might therefore not affect descriptive norms in such a direct way. Media portrayals before the COVID-19 pandemic tended to focus more on loneliness among elderly people, potentially contributing to normalizing it more for this age group. In fact, loneliness is often (wrongly) expected to be characteristic of older people (Pikhartova et al., 2015), whereas younger people are assumed to be the embodiment of sociality. Feeling lonely would make young people different from this perceived norm, so one could expect that feeling lonely is less unexpected and potentially less stigmatizing for older than younger people.

How Might Loneliness Stigma be Affected by Individualism?

So far research on the stigma associated with loneliness is restricted to North American contexts, but since any type of social stigma is inherently cultural (Link & Phelan, 2001), the stigma associated with loneliness might vary across cultures. In this paper we focus specifically on the role of cultural individualism (vs. collectivism), or the extent to which a given society promotes independence and separateness versus interdependence and social connection (Hofstede, 1991). This focus was chosen because of the intrinsic link between this cultural dimension and relational norms in a given society (Triandis, 1995).

Based on these conceptualizations, one could expect that cultural environments that value independence, autonomy, and self-reliance (individualistic societies) might be associated with more loneliness stigma because feelings of loneliness imply a deep need for connection that runs counter to those values. For example, referring to the US, Professor of Psychiatry Jacqueline Olds said “there is a stigma about loneliness because our culture romanticizes self-reliance” (Mental Health Foundation, 2010). However, the opposite is also possible: The greater

importance of connection and lower tolerance for deviance generally found in more collectivist societies (Pescolosido & Rubin, 2000; Triandis, 1995) might make the stigma associated with loneliness stronger in collectivist countries. As Chinese anthropologist Fei (1992) stated, in China, the failure to be well connected to others is 'to be less than human.'

In the absence of evidence for how individualism affects the stigma of loneliness, we might consider how it affects self-reported loneliness. However, findings in this area are inconsistent, with some reporting more loneliness in collectivist environments and others reporting more loneliness in individualistic contexts (see Barreto et al., 2020; Heu et al., 2020). Therefore, it is unclear whether loneliness is more descriptively normative—and therefore potentially less stigmatized and stigmatizing—in more or in less individualistic societies. In addition, evidence for how cultural individualism affects self-reported loneliness might not say much about actual loneliness experiences because individualism might affect how people *actually* feel, but also (or instead) whether or not people *admit to* feeling lonely—a social desirability bias. That is, people might at the same time feel more lonely and more constrained by stigma in a given society, a combination that could misleadingly reveal lower levels of loneliness precisely where it is most felt.

Overview of the Study

This exploratory study aims to examine how multiple perceptions that shed light on the stigma associated with loneliness are patterned by gender, age, and cultural individualism (vs. collectivism). We focus on the extent to which these factors predict who endorses most stigmatizing views (as indexed by impressions of those who feel lonely and attributions for loneliness), and who perceives and feels most stigma (as indexed by perceived community

stigma, shame, and inclination to reveal or conceal loneliness). The size and scope of the BBC Loneliness data allows us not only to examine effects of age, gender, and cultural individualism with confidence, but also to examine the interactions between these factors. In addition, by including participants from 16-99 years old, living in a variety of countries, this sample allows us to address a major drawback of prior studies on this topic that focused uniquely on US populations, predominately of college students. This study was largely exploratory, so predictions for this study were not raised or preregistered.

Method

Participants

The sample included 45,548 participants who described themselves as either women or men, lived in a country that appeared on the Hofstede database, and provided input on their age (see Supplementary Materials for details). We only included participants who described themselves as men or women because our focus was on how gender is linked to social expectations that might make men and women differently vulnerable to the stigma associated with loneliness. This sample had a mean age of 50 years old (*SD* =15.5 years), including 30,998 women (68%). Although most of the participants lived in the UK (N=33,304, 73%), the effects of individualism (vs. collectivism) are produced by *variance* in individualism between countries (and so cannot be driven by one country specifically). Further demographic details of this overall sample are provided in Table 1, right column, with specific n per country provided in the supplementary materials. We did not ask participants what city they lived in, their race or ethnicity, whether or not they had a disability, or their educational status.

The survey was subdivided into branches to minimize the time it took to complete. The dependent variables causal attributions, controllability, and participants' own feelings of loneliness were part of the general branch of the survey—analyses for these variables focus on the total N of 45,548. The other dependent variables of interest here (impressions of people who feel lonely, community stigma, shame, and inclination to conceal) were in the 'stigma branch' of the survey—analyses for these variables focus on the N=9,554 that took part in the stigma branch. Demographic information for this subsample is provided in Table 1, left column—the composition of this subsample was very similar to that of the overall sample.

Dependent Measures

Own Loneliness

In our analysis of the stigma associated with loneliness, we include people's own feelings of loneliness as a covariate.[1] In doing so, we take into account existing evidence that loneliness affects self and other perceptions—with people who feel lonely being less positive about the self and their friends, but more positive about new contacts, than people who do not feel lonely (Christensen & Kashy, 1998; Duck et al., 1994; Jones et al., 1983; Tsai & Reis, 2009; cf. Kerr & Stanley, 2020; Rotenberg & Kmill, 1992). Felt loneliness is also associated with fear of rejection (Cacioppo et al., 2006; Watson & Nesdale, 2012), which might affect shame or inclination to conceal. Felt loneliness was operationalised by four questions from the UCLA loneliness scale that did not mention loneliness explicitly (Do you feel a lack of companionship? Do you feel left out? Do you feel isolated from others? Do you feel in tune with people around you?, reversed, α

[1] Please see Supplementary Materials for the results when participants' own feelings of loneliness are not included as a covariate.

= .84) with answers provided on five point Likert-type scales from 1 (never) to 5 (always). For further details on how gender, age and country-level individualism predict feelings of loneliness, please refer to [citation blinded].

Impressions of People Who Feel Lonely

The impression measure was based on Lau and Gruen (1992). Participants were presented with 21 semantic differentials on a scale of 1-7, with the positive trait on the left/lower end of the scale and its negative opposite on the right/higher end of the scale (e.g. Relaxed --- Nervous). Higher scores on this measure reflect more negative impressions of people who are feeling lonely. Participants were asked to imagine 'a person who is feeling lonely' and to indicate how they viewed this person for each trait. Lau and Gruen (1992) differentiated four categories of: Adjustment, Sociability, Competence, and General Evaluation. However, in our dataset, combining all items generated a reliable scale (α=.91) and therefore, for the sake of parsimony, we analyse this measure as a single scale, with higher scores revealing more negative perceptions. Note that participants did not compare their impressions of 'lonely vs. non-lonely' targets—therefore, stigmatizing impressions need to be inferred from the magnitude of absolute scores (i.e., whether or not these are above the scale mid-point). Results for the separate impression categories are given in the supplementary materials.

Causal Attributions for Loneliness

We had two measures of attributions of loneliness. First, we used a measure of attributions for another person's loneliness developed for this study based on the work of Michela et al. (1982). These authors described a person who felt lonely due to either a lack of friends to do things with or a lack of a boyfriend or a girlfriend and asked participants to what

extent each attribution was a likely cause of that person's loneliness. Based on participants responses, the authors differentiated four categories of attributions: Internal and stable (e.g. "the person is afraid of being rejected"), internal and unstable (e.g. "the person doesn't try hard enough"), external and stable (e.g. "The person believes other people […] aren't interested in meeting new people"), and external and unstable (e.g. "there aren't enough opportunities to meet people"). In our study we wanted to avoid pre-defining what had caused the person's loneliness. To do so, participants saw statements that corresponded to each of these attributions and rated to what extent they thought the individual described in each statement felt lonely (e.g. "The person believes there is little chance of making a new friendship"; ratings from 1 = this person is not very lonely to 5 = this person is very lonely). High scores reflect a participant's perception that particular behaviours cause loneliness and therefore reveal their endorsement for that particular attribution to loneliness.

Preliminary analysis of the causal attributions showed that, when grouping the attributions conceptually in line with Michela et al. (1982), reliabilities were low: None of the four subscales was reliable at the conventional level ($\alpha>.70$). Focusing only on the Internal/External distinction yielded more acceptable reliabilities: The Internal factor reached satisfactory reliability ($\alpha=.72$), while the External factor fell just short ($\alpha=.67$). For this paper we, therefore, only differentiate between internal and external attributions, but even here the findings should be interpreted with caution. Note that we are not interested in whether people find each attribution plausible overall but, rather, in the tendencies to prefer one type of attribution over the other—with internal attributions reflecting more stigmatizing attitudes than external ones. Therefore, we created a difference score, whereby scores higher than zero reflect a tendency to

prefer internal attributions for loneliness over external attributions (and therefore more stigmatizing attributions).

The second measure of attributions referred to perceived controllability of loneliness. We used four items developed for the purpose of this study (α=.83). Two items asked about the extent to which participants felt they could control *their own feelings* of loneliness: "If you think about when you feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by… 1) something you can change? 2) something you can control? The other two items asked about the extent to which participants thought that *other people,* more generally, are able to control their feelings of loneliness: "When other people feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by … 3) something they can change? 4) something they can control? Participants indicated their agreement with these items on a scale of 1 (Strongly disagree) to 5 (Strongly Agree), so higher scores reveal more controllability perceptions and scores above 3 (mid-point) suggest more stigmatizing perceptions.

Perceived Stigma in the Community

This measure consisted of four items developed for this study and closely based on the Public subscale of the measure of Collective Self-Esteem (Luthanen & Crocker, 1992). Items included, for instance, 'In general, people in the community where I live tend to think that being lonely is a sign of weakness.' The items formed a reliable scale (α=.77) and were rated on a scale of 1 (Strongly disagree) to 7 (Strongly agree), with higher scores reflecting greater perceptions of stigma in the community and scores above 4 indicating more perceived community stigma.

Shame Surrounding Loneliness

We assessed the extent to which participants felt ashamed about feelings of loneliness, using three items developed for this study: 'When I feel lonely, I feel ashamed about it', 'When I feel lonely, I am too embarrassed to admit it to others', and 'When I feel lonely, I don't talk to others about it.' These three items were rated on a scale of 1 (Strongly disagree) to 7 (Strongly agree) and together, they formed a reliable scale (α = .80) with higher scores revealing more shame and scores above 4 revealing more felt stigma.

Concealing Loneliness

We included a single item to examine inclination to conceal loneliness. Participants were asked to imagine they found themselves having a conversation with co-workers where the topic of loneliness came up. They were then asked whether, if they found themselves in this situation, they would reveal their own feelings of loneliness as part of that conversation. This item was rated on a scale of 1 (Would definitely reveal) to 7 (Would definitely not reveal), with a higher score on this item reflecting a greater inclination to conceal feelings of loneliness and scores above 4 suggesting more felt stigma.

Procedure

Participants took part in an online survey launched in February 2018 on BBC Radio 4 and BBC World Service, and covered by several other media outlets. Data were collected during a four month period to increase the opportunity for a diverse to set of participants to take part. Participants accessed the study online and were first provided with information about the study. Those who agreed to participate answered a range of questions about their social life and their experiences with loneliness and were then randomly assigned to four different branches of the survey. The overall questionnaire included measures that did not pertain to the stigma of

loneliness and that can be perused, along with the data and analyses scripts for this paper, here: https://osf.io/hv7t2.

Ethical approval was obtained for this study, prior to data collection, from the University Research Ethics Committee at the University of [blinded for review]. The study followed ethical guidelines by the British Psychological Society and the Declaration of Helsinki (2013). The study took approximately 45 mins to complete. Those who participated did so on a voluntary basis.

Analytical Plan

We analysed how gender, age, and country-level individualism (predictors) affected a series of stigma-related perceptions (dependent variables). Our data have a nested structure, since participants are nested within countries. We explore individual-level (age, gender) as well as country-level effects (individualism) on stigma surrounding loneliness. We analysed the data using the package *lmer* in R, creating a multilevel mixed effects model in which country of residence is the superordinate (level 2) factor. Specifically, country of residence is included as a random intercept. This model postulates that participants from the same country are more similar in their scores on the DV than participants from different countries. If the factor 'Country' reaches significance, this indicates that a multilevel structure is appropriate for the DV in question. As described above, we include people's own feelings of loneliness as a covariate among the fixed effects. Given the large sample, we decided to adopt a more stringent significance criterion of $p<.01$, rather than $p<.05$.

Results

Descriptive Statistics

Table 2 provides descriptive information for the key variables. All means were significantly different from the mid-point of the scales, though some of these differences were very small. Overall, participants had only very slightly stigmatizing scores when compared to the mid-point of the respective scales. Participants (1) reported positive impressions of the lonely target, (2) indicated that loneliness is uncontrollable; and (3) did not perceive much stigma in the community. On the other hand, participants: (4) Attributed loneliness more internally than externally, (5) reported shame when experiencing loneliness and (6) indicated a preference to conceal the loneliness they experienced. Table 3 displays the correlations between the different stigma indicators. Attributions did not significantly correlate with the other stigma indicators. Impressions of people who feel lonely and controllability of loneliness had only very small correlations with other variables and these were in the opposite direction of what would be expected—for example, more positive impressions of people who feel lonely were associated with more shame, and perceived controllability of loneliness was associated with less shame. By contrast, perceived stigma in the community, shame, and concealment were all more substantially inter-related and in the expected direction—with more perceived stigma in the community being associated with more shame and inclination to conceal. The full statistics for each of the dependent variables described below are provided in the Supplementary Materials (Tables A-F).

Impressions of People Who Feel Lonely

The multilevel model showed that the random effect reflecting the differences between countries reached significance—model fit improved when including the random intercept, χ^2 (1) = 21.68, p<.001. Participants' personal feelings of loneliness did not significantly affect

impressions, β= .01, $F(1, 8687) = 2.26$, p=.133. Regarding the predictors of stigma, none of those reached significance at $p < .01$.

Internal Attributions for Loneliness

The multilevel model showed that the random effect reflecting the differences between countries reached significance, χ^2 (1) = 21.69, p<.001. The size of the difference in internal vs external attributions was further predicted by participants' own feelings of loneliness, β = .04, $F(1,32012)=206.78$, p<.001, CI_{lower} = .035, CI_{higher} = .046, such that those who reported feeling more lonely showed a greater tendency to make internal (stigmatizing) attributions over external attributions for loneliness.

With regard to our central predictors, there were main effects of gender, β = -.07, $F(1,31778)=114.69$, p<.001, CI_{lower} = -.08, CI_{higher} = -.05, and age, β = .03, $F(1,30818)=169.93$, p<.001, CI_{lower} = .02, CI_{higher} = .04. Further, the interaction between gender and age reached significance, $F(1,32003)=23.82$, p<.001, as did the 3-way interaction between gender, age and country-level individualism, $F(1,29886)= 6.44$, p=.011, albeit slightly above our criterion of p=.01. No other effects were significant with $p < .01$.

Breakdown of the interactions showed that young women were the least likely of all groups to differentiate between internal and external attributions for loneliness. This effect is represented graphically in Figure 1. The significant 3-way interaction further indicated that these effects were more pronounced in more individualistic cultures: In highly individualistic cultures, young women indicated no preference for internal (vs external) attributions (M= -0.03, SD= 0.70); this differentiates them from young men, M_{diff}= -.10, $t(31804) = -8.54$, p<.001, CI_{lower} = -

0.12, CI_{higher} = -0.08, and from older women, β=.06, $t(28621)=12.41$, $p<.001$, CI_{lower} = 0.05, CI_{higher} = 0.07, who showed a slight preference for internal (stigmatizing) attributions.

Perceived Controllability of Loneliness

The multilevel model showed that the random effect reflecting the differences between countries reached significance, χ^2 (1) = 303.80, $p<.001$. Perceived controllability of loneliness was also affected by felt loneliness, such that those who felt more lonely perceived loneliness as less controllable, β = -.20, $F(1, 37191) = 2839.39$, $p<.001$.

Further, there were main effects of the three predictors of interest: gender (M_{men}= 3.04, SD_{men} =0.87, M_{women}= 2.97, SD_{women} =0.90), M_{diff} =.07, F (1, 37191) = 86.39, $p<.001$, CI_{lower} = .06, CI_{higher} = .09, age, β = -.03, F (1, 37191) = 16.23, $p<.001$, CI_{lower} = -.04, CI_{higher} = -.01, and individualism, β = -.02, F (1, 37191) = 14.32, $p<.001$, CI_{lower} = -.04 , CI_{higher} = -.01. Older people, women, and those in more individualistic cultures perceived loneliness as less controllable relative to younger people, men, and those in collectivistic cultures. No other effects were significant with $p < .01$.

Perceived Stigma in the Community

The multilevel model showed that the random effect reflecting the differences between countries reached significance, χ^2 (10) = 47.68, $p<.001$. Perceived stigma in the community was predicted by feelings of loneliness, β= .37, $F(1,7843)= 773.78$, $p<.001$, CI_{lower} = .34 , CI_{higher} = .39, so that those who felt more lonely perceived more stigma in the community.

Further, there were main effects of the three predictors of interest: Gender, M_{diff} = -.15, $F(1, 7843)=28.22$, $p<.001$, CI_{lower} = -0.21 , CI_{higher} = -0.10, age, β= - .18, $F(1, 7843)=161.94$,

p<.001, CI_{lower} = -.23 , CI_{higher} = -.14, and individualism, β= -.09, F(1, 7843)=16.64, p<.001, CI_{lower} = -.15 , CI_{higher} = -.03. Older people, women, and those in more individualistic cultures perceived *less* stigma in the community relative to younger people, men, and those in collectivistic cultures. No other effects were significant with $p < .01$.

Shame Surrounding Loneliness

The multilevel model showed that the random effect reflecting the differences between countries reached significance, χ^2 (1) = 47.31, p<.001. Shame surrounding loneliness was predicted by feelings of loneliness, β = .60, F(1, 8199)=1362.53, p<.001, CI_{lower} = .57 , CI_{higher} = .63, such that people who felt more lonely reported greater feelings of shame.

Further, shame surrounding loneliness was predicted by main effects of gender, M_{diff}= .13, F(1, 8199)=13.27, p<.001, CI_{lower} = .06, CI_{higher} = .20, and age, β = - .29, F(1, 8199)=226.24, p<.001, CI_{lower} = -.34, CI_{higher} = -.23. These main effects show that shame was higher amongst women and amongst younger people, relative to men and older people. No other effects were significant with $p < .01$.

Inclination to Conceal Loneliness

The multilevel model showed that, in this case, the random factor Country did *not* impact model fit, χ^2 (1) = 0.37, p=.545. Participants' inclination to conceal loneliness was affected by their own feelings of loneliness, β= 0.27, F(1, 8802)=236.76, p<.001, CI_{lower} = .24, CI_{higher} = .31, such that people who felt more lonely reported a greater tendency to conceal it.

In addition, inclination to conceal loneliness was predicted by a main effect of age, β = -.18, $F(1, 8802)=97.19$, $p<.001$, CI_{lower} = -.25 , CI_{higher} = -.12 – younger people were more inclined to conceal loneliness than older people. No other effects were significant with $p < .01$.

Discussion

We explored the stigma-related perceptions associated with loneliness and how those vary across gender, age, and cultural individualism. We distinguished between participants' endorsement of stigma (i.e., their own stigmatizing attitudes towards those who feel lonely: impressions and attributions), and their perceived stigma (i.e., the extent to which they perceived a stigma associated with loneliness in their community, and their feelings and attitudes towards their own loneliness: shame and concealing). Overall, means were around scale mid-points, so there is little evidence of endorsement or perceived stigma in the overall sample. However, the extent to which stigma-related views were expressed was patterned by the independent variables.

Effects of Participants' own Loneliness

Participants' own loneliness was significantly related to all stigma indicators except for impressions of people feeling lonely: The more participants felt lonely the more they made internal (vs. external) attributions for loneliness, the less they perceived loneliness to be controllable, the more they perceived loneliness as stigmatized in their community, the more shame they felt when feeling lonely, and the more inclined they were to conceal their feelings of loneliness. These associations were not core to our focus, but they are nevertheless interesting and consistent with past research showing that loneliness is associated with fear of negative evaluation and fear of rejection (Cacioppo et al., 2006; Watson & Nesdale, 2012).

Effects of Participant Gender

Like Kerr and Stanley (2020), we did not find any effect of gender (or indeed of any predictor) on impressions of loneliness. However, young male participants differentiated more between internal and external attributions for loneliness and male participants of all ages were more likely to see loneliness as controllable and to perceive a stigma around loneliness in their community. These findings suggest that loneliness is more stigmatized by men than by women, but also that men are more exposed to this type of stigma than women. At the same time, however, women were more likely than men to report that they would feel shame when feeling lonely. This later result might be less related to actual experiences of shame linked to loneliness and more to the phenomenon that men are less likely to express shame than women, stemming from differences in the extent to which men and women are socialized to feel or express shame (Else-Quest et al., 2012).

Effects of Participant Age

Older people were more likely to make internal (vs. external) attributions for loneliness, but younger people were more likely to perceive loneliness as controllable. Though participants were asked to make attributions for another person's loneliness, their answers might draw on differences in the predictors of loneliness across the lifespan and therefore in respondents' own loneliness experiences. While both internal and external factors play a role across the lifespan, loneliness in older age is more strongly linked to factors such as health issues and widowhood, which are internal and uncontrollable, whereas in younger people loneliness is most often predicted by concerns about friendships, which are more ambiguously attributed (Qualter et al., 2015). Participants may have, therefore, projected from the causes of their own lonely feelings to how they perceived loneliness to emerge in others.

Younger people also perceived more stigma in the community, expressed more shame and greater inclination to conceal loneliness. This might reflect the (erroneous but prevalent) idea that loneliness is more prevalent among older people, which would by definition make loneliness more normative in older participants, and lead younger participants to feel more vulnerable to stigma from the community, more ashamed, and more keen to conceal their loneliness. In a nutshell, representing loneliness as a problem of old age is not helpful to young people as it makes it more deviant at their age.

Effects of Country-Level Individualism

Participants living in individualistic countries were more likely to make internal (vs. external) attributions for loneliness. The only significant interaction revealed in this study showed that internal attributions were prioritised over external attributions the most by older male respondents living in individualistic countries. However, the only two other measures that were affected by cultural individualism showed that it was those living in collectivist countries (i.e., low individualism) who were most likely to make controllable attributions for loneliness and to perceive stigma in their community. This might reflect the idea that interdependence is so core to collectivist cultures that being disconnected is perceived to be a deliberate choice (Fei, 1992). At the same time, collectivist cultures more tightly control individual behaviour, particularly with regard to social relationships (Triandis, 1995), and this control can only be effective if group members are aware that they will be incur social costs if they deviate from the norm, reflected in higher perceived community stigma.

Bringing it all together

In sum, our results generally reveal that stigmatizing views of loneliness are relatively stronger amongst men, young people, and people living in collectivist societies. These results can be explained by reference to the social norms those participants are expected to adhere to. Collectivist societies thrive on strong social networks and the stigma of loneliness might play an important role in encouraging people to remain well connected (Triandis, 1995). Sociality is also key in human development, particularly during adolescence and young adulthood (Qualter et al., 2015), so again the stigma associated with loneliness might play an important role in ensuring that happens. Effects of gender are less clear—stereotypes describe and prescribe more sociality for women than for men (Fiske et al., 2002), while, at the same time, men and women do no differ in actual social engagement or satisfaction with their social ties (Maes et al., 2019). However, in any society, men are expected to be less emotional than women, so the stigma associated with loneliness for men might refer more to a derogation of emotionality than to a derogation of social disconnection per se.

The Importance of Different Stigma Indicators

The current study shows a complex and nuanced picture of how the stigma of loneliness is manifested, since different indicators revealed slightly different patterns of results. We proposed to go beyond people's impressions of those who feel lonely, which is the way in which this has been addressed in the past. How useful was that? We found the measures of impressions and attributions related weakly with the other indicators, and in the opposite direction of what was expected. In particular, we had expected that greater perceived controllability of loneliness would be associated with greater stigma and shame, but found the opposite. When considering this result, it is important to note that the bivariate correlations did not include a multilevel

structure. When Country was included as a higher-level factor, the negative relationship between shame and controllability no longer reached significance, suggesting that this negative relationship may be driven by extraneous differences between countries (for instance, the extent to which people value controllability, as suggested above). By contrast, perceived stigma in the community, shame, and inclination to conceal correlated with each other in expected ways. Of course, the impression and attribution measures referred to other people, whereas the remaining measures referred more to the self, which might explain these patterns of association. One might argue that perceived community stigma, shame, and concealment are more relevant to understanding individual experiences with stigma, which in turn predict their behaviour—i.e., whether or not they disclose feeling lonely, or whether they seek social support. In turn, impressions and attributions might be more relevant to whether or not such support is available. If so, then an understanding of the stigma associated with loneliness benefits from considering the multiple ways in which it can be expressed and experienced. These results, therefore, highlight the importance of examining a variety of stigma-related perceptions, so as to gain a more complete understanding of how it operates in a given context. Campaigns or interventions that address only one aspect of stigma might miss the way their particular target group experiences the stigma of loneliness, or address it incompletely.

Limitations and Future Directions

It is, of course, important to acknowledge that this study has important limitations. A major limitation is that the study did not include a representative sample of residents of each country. This, together with the fact that the study was advertised primarily through the BBC radio channels, might have skewed the sample towards older retired participants with a higher

education level, who might be better informed about loneliness experiences and, therefore, stigmatize those less. Future research might wish to carry out similar analyses with representative samples. However, it is important to note that what we lost in representativeness of the population, we gained in representativeness of the individualism-collectivism construct (usually represented by only a handful of countries, at best), since, with this method, we were able to collect data that spans the complete continuum specified by Hofstede.

Another limitation is that we did not use participants' own definitions of loneliness, which might themselves vary by gender, age, or individualism. Although a recent study has shown more variability in loneliness definitions within cultures than across cultures (Heu et al., 2021), it is, of course, possible that gender and age are two of the predictors of this within-culture variability. Future research might be able to examine this in more detail, as well as its implications for loneliness stigma. In addition, the study relied on self-reported measures that are vulnerable to socially desirable responses. This does not allow us to differentiate effects that pertain to how people actually feel from effects that reflect their willingness to abide by what they perceive to be normative local, age- or gender-appropriate normative standards. As such, it is important to regard our findings as what people say about their views on loneliness, rather than necessarily what they think. That said, this can be seen as having good external validity, since stigma tends to play out in public contexts, which is where social desirability is most salient. A more problematic measurement issue is that the measure of internal (vs. external) attributions was not highly reliable. This might explain why in some cases this measure revealed patterns different from the other measures (e.g., whereas young people scored higher than older people on

all the other measures, older people made stronger internal vs. external attributions). Future research might wish to examine this further.

The large sample can easily lead to the detection of effects that are so small they might not be very meaningful. However, it is important to note that small effects obtained in such a diverse sample and under uncontrolled (or 'noisy') conditions, can actually reflect larger effects in samples that are more homogeneous on variables that are not central to the analysis, and obtained under more controlled conditions. We, therefore, take these effects seriously, while keeping in mind they need to be replicated with different methodologies. It is also true that participants were unequally distributed across country. However, multi-level analyses of country effects are sensitive primarily to the number of countries included (which in this study was the 101 that can be coded on the basis of Hofstede's coding system), rather than to the number of participants per country. Still, future research might wish to examine this issue with more equally sized samples.

It is also important to acknowledge that participants voluntarily chose to participate in this study on loneliness, a framing that might have influenced the extent to which they stigmatized loneliness, or thought of loneliness as socially stigmatized. This could have improved attitudes and perceived stigma, implying that data collected in other circumstances might actually reveal more stigma than we found. However, it is unclear whether or why one would expect gender, age, and cultural effects to be altered by this data collection method.

Future research might draw on this research to focus on assessing the impact of public campaigns on different indicators of stigma, so as to provide a more nuanced picture of how it operates, and can be changed, enabling campaigns to target its various components. Indeed,

despite good intentions to reduce the stigma associated with loneliness, campaigns and other media discussions around loneliness can make stigma worse because they often describe loneliness as something that is purely negative and must be eliminated ("loneliness is the leprosy of the 21st century", Ferguson, 2018; "Loneliness: Contagious like a bad cold," Daily Express, 2009). Those designing future campaigns or interventions are encouraged to think about the various ways in which stigma is transmitted and experienced, so as to more deliberately and appropriately focus on its manifestations.

Conclusion

This study reveals several ways in which the stigma of loneliness is manifested and how it varies by age, gender, and the extent to which the country where people live is more or less individualistic. Stigma-related perceptions were stronger among young people, men, and those living in collectivist societies. However, they differed slightly by indicator and were revealed in all groups—men, women, young, old, individualistic, or collectivist—highlighting that it is less crucial to identify who stigmatizes or feels stigmatized, and more important to understand how this happens and how it might be addressed. We believe these findings will pave the way for a better understanding of the stigma associated with loneliness, so as to enable better and more efficacious interventions.

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Table 1. Characteristics of the sample used in the current study.

General	Stigma branch	Full survey
% women	68%	67%
% men	31%	32%
% other gender (excluded from analysis)	.004%	.005%
% prefer not to disclose gender (excluded from analysis)	.004%	.005%
Mean age in years (SD)	50.5 (15.4)	50.0 (15.5)
Median age in years	53	52
Age range in years	16–94	16-101
% residing in the UK	74%	73%
Mean Hofstede Individualism Index (SD)[a]	84.64 (13.70)	84.54 (13.80)
% falling below 3SD on Hofstede Individualism Index	4%	4%
Employment status[b]		
In full-time work	1,858 (19%)	8,797 (19%)
In part-time work	748 (8%)	3,425 (7.5%)
In unpaid work	803 (8%)	3699 (8%)
Student (full or part-time)	869 (9%)	4,244 (9%)
Retired	4,088 (43%)	19,974 (44%)
Unemployed	2,351 (25%)	10,800 (24%)
Socio-economic status		
Agreed that financial resources met their needs **very well**	3,345 (35 %)	15,218 (33%)
Agreed that financial resources met their needs **fairly well**	4,662 (50 %)	22,630 (50%)
Agreed that financial resources met their needs **poorly**	1,540 (16 %)	7,560 (17%)
Mean self-reported social status (SD) – max. 9	5.38 (1.45)	5.36 (1.45)
Sexual orientation[c]		
% Exclusively heterosexual	77 %	76 %
% Predominantly heterosexual	12 %	12 %
% Equally heterosexual and homosexual	2 %	2 %
% Predominantly homosexual	2 %	2 %
% Exclusively homosexual	3 %	3.5 %
% Asexual	3 %	3 %
Romantic relationship status		
% Single	28%	28%
% Married or in civil partnership	31%	31%
% In a relationship, but not cohabiting	5.5%	5.5%
% Separated or divorced	19%	19%

% Widowed	6%	6%
Living situation		
% Lives alone	41%	42%

Note: Percentages may not add to 100% due to missing responses and rounding.

[a] See Supplementary Materials for n and Hofstede Index per country.

[b] For employment status, participants could choose multiple options. The percentages reflect the percentage of the total sample who listed this option amongst their answers. As such the percentages do not add to 100%.

c Measured using an adaptation of the Kinsey scale, retaining original wording.

Table 2.

Means, standard deviations and correlations for all stigma indicators.

	Mean (midpoint of scale)	**Deviation from mid-point of the scale**	**SD**	**N observations**
Own Loneliness (covar)	2.55 (3)	- 0.45	1.12	40,474
Controllability	2.95 (3)	- 0.05	0.76	40,143
Causal Attributions	0.06 (0)	0.06	0.51	34,317
Stigma in the Community	3.76 (4)	- 0.24	1.25	8,461
Shame	4.51 (4)	0.51	1.63	8,826
Impressions	4.62 (4)	0.62	0.71	9,456
Tendency to conceal	4.58 (4)	0.58	1.71	9,572

Variables in the first three rows were presented to all participants, whereas variables in the last four rows were only presented to participants in the 'stigma branch' of the study. Sample sizes vary further due to missing data.

All means were significantly different from the mid-point of the scale (all *p*s<.001 in t-test).

Table 3.

Correlations amongst the central variables.

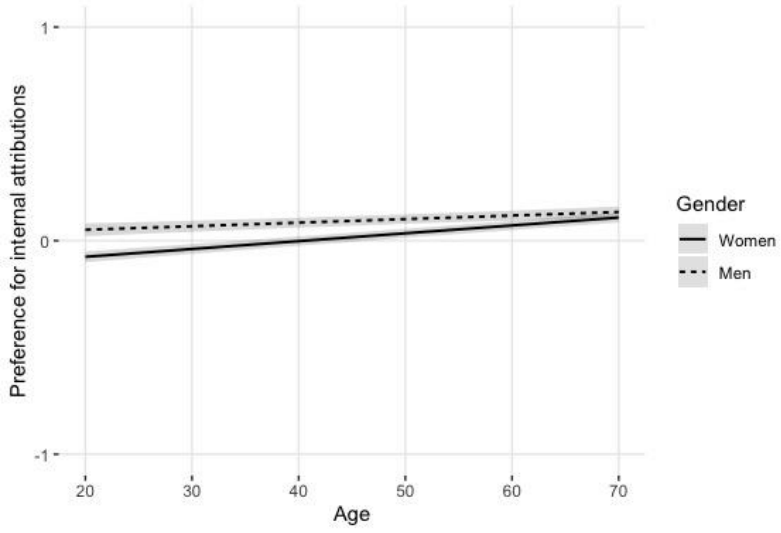
	2.	**3.**	**4.**	**5.**	**6.**	**7.**
1. Own Loneliness	.02	.07	-.26**	.31**	.39**	.17**
2. Impressions	1	.02	.03*	.06**	.15**	.03*
3. Attributions (diff score)		1	-.01	0	-.01	.03
4. Controllability			1	-.06**	-.12**	-.06**
5. Stigma in community				1	.3**	.14**
6. Shame					1	.35**
7. Intention to conceal						1

* $p<.01$ ** $p<.001$

[a] Internal and external attributions were each rated on a scale of 1-5. When creating a difference score, this means that the scale ranges from -4 ($M_{external} = 5$, $M_{internal}=1$) to 4 ($M_{external} = 1$, $M_{internal}=5$), with 0 as the midpoint.

Figure 1.

The interactive effect of gender and age on participants' tendency to make interval vs external attributions for loneliness.



Note: As can be seen in Table 2 above, the y-axis has a range of -4 to +4, but for the purposes of readability the figure gives a restricted range.

Supplementary Files

Sample selection details

A total of 48,550 people completed the BBC Loneliness Experiment. The analyses reported in the current paper include gender, age, and country-level individualism as between-participant predictors. Therefore, those participants who did not provide information on these variables are not included in these analyses. Specifically, 762 participants did not provide their age, and we also excluded two participants who were under 16 years old. For country-level individualism, each participant was assigned a score on the Hofstede's Individualism Index based on their country of residence (1997, updated 2015), which provides cultural individualism scores for 101 countries, on scale ranging from 6 (Guatemala) to 91 (United States), with higher scores representing greater country-level individualism. Out of our total sample, 2013 participants could not be classified because their country of residence did not appear in the Hofstede database. Further, only those who described their gender as female or male were included in the analyses (N = 48,207), since we did not have sufficient data to perform a meaningful analysis of participants who reported their gender to be 'other' (N=235) or who preferred not to indicate their gender (N=108).

Wording of all questions on Qualtrics questionnaire

Loneliness feelings. We used four items from the UCLA scale: "In general, do you feel a lack of companionship?", "In general, do you feel left out?", "In general, do you feel isolated from others?", and "In general, do you feel in tune with people around you?". Participants responded to these items three times, first reporting how frequent the feeling is (from 1 = never to 5 = always), how intense (from 1 = not intense at all to 5 = very intense), and how long it lasts

(1 = hours, 2 = days, 3 = weeks, 4 = months, 5 = longer). These ratings are highly correlated and reveal similar effects of gender, age, and cultural individualism (see Barreto et al., 2020). Therefore, and given that the original UCLA scale is rated on frequency, for this paper we used frequency ratings as a covariate.

Age. "How old are you", responses were open and specified in years.

Gender. "What is your gender?", response alternatives: Male, female, other, prefer not to say.

Individualism. "Which country are you currently living in?". To assess individualism, each participant was assigned a score on Hofstede's Individualism Index based on their country of residence (Hofstede, 1997) using the tool available on this webpage: https://www.hofstede-insights.com/product/compare-countries/

Impressions of people who are feeling lonely. Based on Lau and Gruen (1992): **"**For this next task, we would like you to imagine a person who is feeling lonely. Please tell us what you think about them using the adjective pairs below. Choose were you think the person would fall between each pair of words". Pairs were: relaxed-nervous; steady-shaky; refreshed-tired; stable-unstable; healthy-sick; happy-sad; satisfied-dissatisfied; nice-awful; kind-cruel; friendly-unfriendly; good-bad; attractive-ugly; smart-dumb; successful-unsuccessful; superior-inferior; sharp-dull; valuable-worthless; confident-unsure; strong-weak; active-passive; sincere-insincere. Ratings were made on 7 point scales, with higher values reflecting more positive ratings.

Causal attributions for loneliness. Based on the work of Michela, Peplau, and Weekes (1982): **"**For the following statements, please rate how much you estimate the person described in each statement is likely to feel lonely or not: The person believes there is little chance of

making a new friendship." Response scale: from 1 = this person is not very lonely to 5 = this person is very lonely. The remaining items were: "The person is afraid of being rejected if he or she tries to state a friendship or relationship", "The person doesn't try hard enough to meet someone"; "The person hasn't' had any luck meeting people", "The person doesn't know what to do to start a friendship or a relationship", "The person is shy", "The person is physically unattractive", "This person believes other people have their own groups of friends and aren't interested in this person"; "This person believes other people are afraid of making friends"; "The person is always in impersonal situations with too many people"; "There aren't enough opportunities to meet people"; "Other people don't try to make friends"; "The person has an unpleasant personality".

Controllability of loneliness. "If you think about when you feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by something you can change?", "If you think about when you feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by something you can control?", "If you think about when other people feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by something they can change?", and "If you think about when other people feel lonely, to what extent do you agree or disagree that the feeling of loneliness is caused by something they can control?"

Perceived stigma in the community. "Below, you will find statements about the community in which you live. Think about your community and say whether you agree or disagree with each statement". Statements were: "In general, people in the community where I live think that people who are lonely are less worthy than others"; "In general, people in the

community where I live respect people who are lonely"; "In general, people in the community where I live think there is something wrong with people who are lonely"; and "In general, people in the community where I live tend to think that being lonely is a sign of weakness". Responses were provided on 7 point scales, with 1 = strongly disagree and 7 = strongly agree.

Shame surrounding loneliness. "Think about a time when you have felt lonely. How much do you agree or disagree with the following statements." Statements were: "When I feel lonely, I feel ashamed about it"; "When I feel lonely, I am too embarrassed to admit that to others"; and "When I feel lonely, I do not talk to others about this". Responses were provided on 7 point scales, from 1 = strongly disagree to 7 = strongly agree.

Concealing loneliness. "You have recently started working at a new workplace. One day during the lunch break, one of your colleagues talks about her cousin, who is lonely. She goes into some detail about her cousin's life. Your colleague then begins to talk more generally about people who are lonely. Your colleagues do not know that you are lonely. If you were to find yourself in this situation, having this conversation with your colleague, would you choose to reveal this fact about yourself or would you, instead, choose to conceal the fact that you are lonely?". Responses were provided on a 7 point scale, from 1 = would definitely reveal to 4 = unsure, to 7 = would definitely not reveal.

Supplementary Analyses

Results if feelings of loneliness are not included in the model. In the manuscript text, we include participants' own feelings of loneliness as a covariate when studying the stigma associated with loneliness. After all, it stands to reason that a person who feels lonely themselves may have a different view of the stigma of loneliness than a person who does not personally feel

lonely. Here, we report the results when that covariate is not included, that is, when the model includes only the central predictors (gender, age, cultural individualism) and their interactions.

Impressions of people who feel lonely. None of the effects reached significance. The effect of country-level individualism, which had reached significance when the covariate is included (p=.002) now drops to non-significance (p=.057).

Causal Attributions for Loneliness. Whereas before there were no main effects, now the main effects of age β =0.10, $F(1,34310) = 217.16$, $p<.001$ and gender β =0.15, $F(1,34310) =148.98$, $p<.001$ reached significance. As before, there was evidence for an interaction between gender and age, $F(1,34310)=29.36$, $p<.001$, and the 3-way interaction between gender, age and country-level individualism just reached significance as well, $F(1,34310)=8.08$, $p=.004$. Breakdown of these interactions showed the same patterns as before: younger women were the least likely of all groups to differentiate between internal and external attributions for loneliness, and this was especially true in more individualistic cultures. In highly individualistic cultures, young women indicate no preference for internal (vs external) attributions (M= - 0.02, SD= 0.72), this differentiates them from young men, M_{diff}=.11, $t(34310) = 10.20$, $p<.001$, and from older women, β=.004, $t(34310)=12.02$, $p<.001$. No other effects were significant with $p < .01$.

Controllability of Loneliness. With regard to the predictors, there was a main effect of gender, M_{diff} =.09, F (1, 37182) = 88.64, $p<.001$, and country-level individualism, β= - .08, $F(1, 37182) = 180.28$, $p<.001$. The main effect of gender showed that men found loneliness more controllable than women. The main effect of country-level individualism showed that in more individualistic cultures, people find loneliness *less* controllable. The interaction between those

two terms (which reached significance before) now dropped to non-significance, F (1, 37182) =3.06, p=.080. No other effects were significant with $p < .01$.

Perceived Stigma in the community. There were main effects of the three predictors on perceived stigma in the community: Gender, M_{diff} = .19, F(1, 7834)=78.48, p<.001, age, β= - .17, F(1, 7834)= 335.60, p<.001, and individualism, β= -.10, F(1, 7834)=59.33, p<.001. Older people, women, and those in more individualistic cultures perceived *less* stigma in the community relative to younger people, men, and those in collectivistic cultures. No other effects were significant with $p < .01$.

Shame surrounding loneliness. Shame surrounding loneliness was predicted by main effects of all other predictors, gender M_{diff}= -.10, F(1,8190)=7.32, p=.007, age, β = - .16, F(1, 8190)=354.37, p<.001, and country-level individualism, β = .10, F(1, 8190)=97.97, p<.001. These main effects show that shame was higher amongst women, younger people, and those in individualistic cultures, relative to men, older people, and those in collectivistic cultures.

The interaction between gender and individualism, which reached significance before, now dropped to non-significance, F=1.34, p=.246. No other effects were significant with $p < .01$.

Inclination to conceal loneliness. The inclination to conceal loneliness was predicted by main effects of gender, β = -.05, F(1, 8793)= 7.87, p= .005, age, β = -.19, F(1, 8793)=329.87, p<.001, and country-level individualism, β = .10, F(1, 8793)=80.87, p<.001. The inclination to conceal feelings of loneliness was stronger amongst younger people, women, and those in more individualistic cultures, relative to older people, men, and those in more collectivistic cultures. No other effects were significant with $p < .01$.

Analysis using separate impression categories. In the manuscript we take together all impression items into a single scale. However, the original authors (Lau and Gruen, 1992) differentiate four impression categories: Sociability, Adjustment, Competence and General Evaluation. In this section we offer the analysis separated by the different impression categories.

Sociability. Sociability impressions of people who feel lonely were predicted by one's own feelings of loneliness, $\beta = -0.06$, $F(1, 8793)= 43.48$, $p< .001$, so that those who feel more lonely themselves report less negative impressions of the sociability of people who feel lonely compared to those who feel less lonely themselves. Additionally, there was a main effect of age, $\beta = 0.06$, $F(1, 8793)= 31.68$, $p< .001$, so that older people reported more negative impressions of the sociability of people who feel lonely compared to younger people. No other effects were significant with $p < .01$.

Adjustment. Adjustment impressions were affected by main effects of all four predictors, but no interactions. People who felt more lonely themselves, rated people who feel lonely as *less* well-adjusted than did those who do not feel lonely themselves, $\beta = 0.04$, $F(1, 8793)= 16.006$, $p< .001$. Women rated people who feel lonely as *less* well-adjusted than did men, $M_{diff} = -0.13$, $F(1, 8793)= 33.42$, $p< .001$. Older people rated people who feel lonely as better adjusted than did younger people, $\beta = -0.08$, $F(1, 8793)= 62.24$, $p< .001$. Finally, those in more individualistic cultures, rated people who feel lonely as less well-adjusted than did those in more collectivistic cultures, $\beta = 0.04$, $F(1, 8793)= 32.22$, $p< .001$. No other effects were significant with $p < .01$.

Competence. Competence impressions were affected by main effects of one's own feelings of loneliness, gender, and country-level individualism. People who felt more lonely themselves, rated people who feel lonely as *less* competent than did those who do not feel lonely

themselves, β = 0.06, $F(1, 8909) = 27.56$, $p < .001$. Older people rated people who feel lonely as less competent than did younger people, β = 0.07 , $F(1, 8909) = 34.68$, $p < .001$. Finally, those in more individualistic cultures rated people who feel lonely as less well-adjusted than did those in more collectivistic cultures, β = 0.03, $F(1, 8909) = 17.08$, $p < .001$. No other effects were significant with $p < .01$.

General Evaluation. Finally, for general evaluation of people who feel lonely, none of the terms reached significance with $p < .01$.

Taken together, the results on these different impression categories seem somewhat scattered. For instance, there are considerable differences between the effects that appear for ratings of sociability and ratings of adjustment: the effects of age are reversed and so are the effects of one's own feelings of loneliness. The effect of country-level individualism appeared (in the same direction) both for the Adjustment and Competence impressions, and indeed it is this effect that seems most robust, appearing also when taking together all these items into a single scale.

Tables showing the full regression model for all variables

The tables below (A-F) show the full multilevel regression model for each of the central DVs.

Table A. Full regression model for the Impressions measure

					95% CI	
Term	**Estimate**	***SE***	**F-value**	**p-value**	**Lower bound**	**Upper bound**

Gender [-1 = men; 1 = women]	0.01	0.02	0.71	0.398	-0.02	0.05
Age	0.00	0.01	0.29	0.589	-0.03	0.03
Country-level Individualism	0.03	0.02	1.78	0.196	0.00	0.06
OwnLoneliness	0.01	0.01	2.26	0.133	0.00	0.03
Gender x Age	0.01	0.02	0.61	0.437	-0.02	0.05
Gender x Individualism	-0.03	0.02	2.62	0.105	-0.06	0.01
Age x Individualism	0.01	0.01	1.19	0.276	-0.01	0.03
Gender x Age x Individualism	0.00	0.02	0.04	0.840	-0.03	0.03

Random Effect	**Estimate**	**SE**	**df**	**Likelihood ratio test**	**p-value**
Country Residence (intercept)	0.01	0.09	1.00	21.688	0.000
Residual	0.50	0.71			

Table B. Full regression model for the Causal Attributions (difference score – see main text).

					95% CI	
Term	**Estimate**	***SE***	**F-value**	**p-value**	**Lower bound**	**Upper bound**
Gender [-1 = men; 1 = women]	-0.07	0.01	114.69	0.000	-0.08	-0.05
Age	0.03	0.01	169.93	0.000	0.02	0.04
Country-level Individualism	0.00	0.01	0.00	0.987	-0.02	0.01
OwnLoneliness	0.04	0.00	206.78	0.000	0.04	0.05
Gender x Age	0.03	0.01	23.82	0.000	0.02	0.04
Gender x Individualism	0.01	0.01	1.80	0.180	0.00	0.02
Age x Individualism	-0.01	0.00	0.00	0.977	-0.02	0.00
Gender x Age x Individualism	0.02	0.01	6.44	0.011	0.00	0.03

Random Effect	**Estimate**	**SE**	**df**	**Likelihood ratio test**	**p-value**
Country Residence (intercept)	0.00	0.03	1.00	21.69	0.000
Residual	0.25	0.50			

Table C. Full regression model for the measure of Controllability

					95% CI	

Term	Estimate	*SE*	F-value	p-value	Lower bound	Upper bound
Gender [-1 = men; 1 = women]	-0.08	0.01	86.39	0.000	-0.09	-0.06
Age	-0.03	0.01	16.23	0.000	-0.04	-0.01
Country-level Individualism	-0.02	0.01	14.32	0.000	-0.04	-0.01
OwnLoneliness	-0.20	0.00	2839.39	0.000	-0.21	-0.20
Gender x Age	0.02	0.01	5.37	0.020	0.00	0.04
Gender x Individualism	-0.02	0.01	2.99	0.084	-0.03	0.00
Age x Individualism	-0.01	0.01	0.79	0.373	-0.02	0.00
Gender x Age x Individualism	0.01	0.01	0.51	0.477	-0.01	0.02

Random Effect	Estimate	SE	df	Likelihood ratio test	p-value
Country Residence (intercept)	0.00	0.07	1.00	303.79	0.000
Residual	0.53	0.73			

Table D. Full regression model for the measure of community stigma.

					95% CI	
Term	Estimate	*SE*	F-value	p-value	Lower bound	Upper bound
Gender [-1 = men; 1 = women]	-0.15	0.03	28.22	0.000	-0.21	-0.10
Age	-0.18	0.02	161.94	0.000	-0.23	-0.14
Country-level Individualism	-0.09	0.03	16.64	0.000	-0.15	-0.03
OwnLoneliness	0.37	0.01	773.78	0.000	0.34	0.39
Gender x Age	-0.01	0.03	0.10	0.749	-0.07	0.05
Gender x Individualism	-0.04	0.03	2.28	0.131	-0.10	0.01
Age x Individualism	0.00	0.02	0.22	0.637	-0.03	0.04
Gender x Age x Individualism	0.01	0.03	0.10	0.748	-0.04	0.06

Random Effect	Estimate	SE	df	Likelihood ratio test	p-value
CountryResidence (intercept)	0.05	0.22	1.00	47.68	0.000
Residual	1.36	1.17			

Table E. Full regression model for Shame surrounding loneliness.

					95% CI	

Term	Estimate	*SE*	F-value	p-value	Lower bound	Upper bound
Gender [-1 = men; 1 = women]	0.13	0.04	13.27	0.000	0.06	0.20
Age	-0.29	0.03	226.24	0.000	-0.34	-0.23
Country-level Individualism	0.02	0.03	4.50	0.039	-0.05	0.08
OwnLoneliness	0.60	0.02	1362.53	0.000	0.57	0.63
Gender x Age	0.02	0.04	0.25	0.616	-0.05	0.09
Gender x Individualism	0.08	0.04	4.69	0.030	0.01	0.16
Age x Individualism	-0.04	0.02	3.39	0.065	-0.09	0.01
Gender x Age x Individualism	0.02	0.04	0.25	0.616	-0.05	0.09

Random Effect	Estimate	SE	df	Likelihood ratio test	p-value
Country Residence (intercept)	0.02	0.16	1.00	47.31	0.000
Residual	2.17	1.47			

Table F. Full regression model for Intention to Conceal loneliness

					95% CI	
Term	Estimate	*SE*	F-value	p-value	Lower bound	Upper bound
Gender [-1 = men; 1 = women]	0.01	0.04	0.02	0.878	-0.07	0.08
Age	-0.19	0.03	66.28	0.000	-0.25	-0.12
Country-level Individualism	0.02	0.03	1.25	0.289	-0.04	0.08
OwnLoneliness	0.27	0.02	236.76	0.000	0.24	0.31
Gender x Age	0.05	0.04	1.56	0.212	-0.03	0.13
Gender x Individualism	0.01	0.04	0.12	0.729	-0.07	0.09
Age x Individualism	-0.05	0.03	5.53	0.019	-0.10	0.00
Gender x Age x Individualism	0.02	0.04	0.38	0.539	-0.05	0.09

Random Effect	Estimate	SE	df	Likelihood ratio test	p-value
Country Residence (intercept)	0.01	0.09	1.00	0.366	0.545
Residual	2.78	1.67			

Table G. Number of Participants and Hofstede Index per Country of Residence

Full Sample

Country of Residence	Hofstede Individualism	N observations
Guatemala	6	5
Ecuador	8	12
Panama	11	16
Venezuela	12	5
Colombia	13	30
Pakistan	14	48
Indonesia	14	63
Costa Rica	15	20
Peru	16	13
Trinidad and Tobago	16	37
Taiwan	17	36
Korea (South)	18	25
El Salvador	19	2
Bangladesh	20	20
Vietnam	20	23
Thailand	20	70
China	20	98
Singapore	20	184
Chile	23	29
Serbia	25	20
Hong Kong	25	105
Malaysia	26	90
Slovenia	27	16
Portugal	27	76
Bulgaria	30	40
Mexico	30	68
Romania	30	81
Philippines	32	73
Croatia	33	23
Greece	35	94
Uruguay	36	5
Turkey	37	153
Brazil	38	71
Jamaica	39	20
Russia	39	155
Iran	41	7
Morocco	46	7
Argentina	46	53
Japan	46	99

India	48	282
Spain	51	1
Slovakia	52	14
Israel	54	59
Austria	55	60
Czech Republic	58	58
Malta	59	40
Estonia	60	10
Lithuania	60	20
Luxembourg	60	22
Poland	60	104
Finland	63	61
Germany	67	552
Switzerland	68	223
Norway	69	136
Latvia	70	13
Ireland	70	507
Sweden	71	169
France	71	589
Denmark	74	95
Belgium	75	147
Italy	76	210
New Zealand	79	324
Hungary	80	37
Netherlands	80	253
Canada	80	1157
Great Britain	89	33304
Australia	90	992
United States	91	4117
		45548

‘Stigma’ branch

Country of Residence	**Hofstede Individualism**	**N observations**
Guatemala	6	1
Ecuador	8	2
Panama	11	1
Venezuela	12	2
Colombia	13	7

Indonesia	14	11
Pakistan	14	6
Costa Rica	15	7
Peru	16	2
Trinidad and Tobago	16	4
Taiwan	17	8
Korea (South)	18	5
Bangladesh	20	2
China	20	18
Singapore	20	43
Thailand	20	17
Vietnam	20	4
Chile	23	11
Hong Kong	25	30
Serbia	25	5
Malaysia	26	23
Portugal	27	12
Slovenia	27	2
Bulgaria	30	9
Mexico	30	19
Romania	30	16
Philippines	32	20
Croatia	33	2
Greece	35	20
Uruguay	36	3
Turkey	37	28
Brazil	38	15
Jamaica	39	3
Russia	39	30
Iran	41	2
Argentina	46	10
Japan	46	22
Morocco	46	2
India	48	39
Slovakia	52	4
Israel	54	9
Austria	55	10
Czech Republic	58	8
Malta	59	6
Estonia	60	2

Lithuania	60	4
Luxembourg	60	4
Poland	60	20
Finland	63	8
Germany	67	116
Switzerland	68	51
Norway	69	28
Ireland	70	101
Latvia	70	2
France	71	122
Sweden	71	43
Denmark	74	28
Belgium	75	25
Italy	76	38
New Zealand	79	69
Canada	80	243
Hungary	80	8
Netherlands	80	55
Great Britain	89	7021
Australia	90	218
United States	91	848