

Guilt proneness and associated factors in the German adult population: findings from a large cross-sectional web-based survey

BACKGROUND

Guilt proneness is considered an important factor influencing social and ethical behavior, but excessive guilt proneness may also be associated with adverse mental health outcomes. The aim of this study was therefore to provide empirical information on guilt proneness and associated factors in the German adult population.

PARTICIPANTS AND PROCEDURE

The results are based on the weighted data from 1,070 participants (aged 18-79) who took part in a standardized, nation-wide online survey in Germany. Guilt proneness was assessed using weighted scores from the Guilt and Shame Proneness Scale (GASP). The GASP includes two subscales: Guilt-NBE, which assesses negative behavior evaluations, and Guilt-Repair, which assesses repair action tendencies following transgressions. Group differences and associations with sociodemographic characteristics and depression were analyzed using nonparametric tests, Pearson correlations, and multivariable linear regression.

RESULTS

With weighted mean scores of 5.6, guilt proneness findings were comparable for both guilt subscales (on a scale of 1 to 7, where higher scores indicate a greater extent of guilt proneness; the SDs were 1.3 for Guilt-NBE and 1.0 for Guilt-Repair). Guilt proneness was higher in older age groups and in women than in men, but it was not associated with probable major depression.

CONCLUSIONS

Guilt proneness was generally high in German adults and was associated with age and gender, but not with a positive screen for probable major depression. These findings provide initial population-based data on guilt proneness in Germany and highlight the need for further research on its psychological and behavioral correlates.

KEY WORDS

guilt proneness; major depression; gender; adults

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AUTHORS' CONTRIBUTIONS – A: Study design · B: Data collection · C: Statistical analysis · D: Data interpretation · E: Manuscript preparation · F: Literature search · G: Funds collection

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BACKGROUND

The capacity to experience guilt is an important feature of human social functioning. Such feelings are undoubtedly unpleasant for those affected (Cryder et al., 2012), and especially if they are inappropriately strong or long-lasting, they can have clinical significance. For example, excessive guilt may indicate an affective or personality disorder (see, for example, Albani et al., 2002; Prinz, 2004; Tilghman-Osborne et al., 2010, 2012). However, guilt also fulfills important prosocial functions: Feelings of guilt can motivate people to apologize, make amends, and avoid future transgressions. If the guilt is apparent to others, it can help appease those one has wronged and third parties, thus restoring, maintaining, or strengthening social ties (see, for example, Prinz, 2004; Tilghman-Osborne et al., 2010; Vaish, 2018; Williams & Bybee, 1994). Because of these prosocial functions, feelings of guilt are considered a type of ‘moral emotion’ (see, for example, Tangney et al., 2007). The inability to experience guilt and other moral emotions increases the risk of unethical and antisocial behavior (see, for example, Cohen et al., 2011).

Since feelings of guilt can have both adaptive and maladaptive consequences, empirical information on individual differences in the experience and intensity of guilt is of great interest. However, the existing literature on feelings of guilt in adults strongly focuses on specific groups, such as people with obesity and eating disorders, lung cancer survivors, people with depression, female trauma survivors, and bereaved parents (Albohn-Kühne & Rief, 2011; Bovin et al., 2014; Duncan & Cacciato, 2012; Perloff et al., 2019; Singh & Sharma, 2013). Studies relating to the general adult population are rarer (Luck & Luck-Sikorski, 2021b). In addition, in many of the studies, feelings of guilt are primarily recorded as emotional states in the sense of actually experienced feelings of guilt related to experienced situations or biographical events. For instance, our analyses revealed point and lifetime prevalence rates of 10.6% and 68.5%, respectively, for such experienced feelings of guilt in the German general adult population (Luck & Luck-Sikorski, 2021a, 2021b).

Feelings of guilt can be conceptualized both as temporary emotional states and as relatively stable personality traits. State guilt refers to guilt that is actually experienced in response to a specific situation, behavior, or life event. In contrast, guilt proneness describes an individual’s dispositional tendency to anticipate, experience, and respond with guilt across a wide range of situations, even when no specific transgression has occurred. While state guilt reflects concrete emotional experiences, guilt proneness represents an underlying personality characteristic that may influence moral decision-making and interpersonal behavior (Cohen et al., 2011; Tangney et al., 2007).

Existing population-based research in Germany has primarily focused on experienced feelings of guilt as emotional states (Luck & Luck-Sikorski, 2021a, 2021b). In contrast, little is known about guilt proneness as a dispositional characteristic in the German adult population. Population-based data on guilt proneness may contribute to a better understanding of normative variations in this construct and its associations with sociodemographic and mental health-related factors.

Therefore, the aim of the present study was to investigate guilt proneness and associated factors in a large sample of German adults. Specifically, the study examined (1) the distribution of guilt proneness in the adult population, (2) associations with age, gender, and education, and (3) associations with depressive symptomatology as assessed by the Patient Health Questionnaire (PHQ-2).

PARTICIPANTS AND PROCEDURE

PARTICIPANTS AND RECRUITMENT

The results presented in this report are based on data collected in the research project *Online survey on guilt proneness and collective feelings of guilt in the German adult population*. The survey has already been described in detail elsewhere (Luck, 2024). The ethics committee of the University Hospital Jena (AZ: 2022-2796-Bef) reviewed and approved the research project in advance. The survey also complies with the ethical principles of the 1964 Declaration of Helsinki and its subsequent amendments.

The online survey was conducted from January 16 to 23, 2023 by infas quo GmbH, an independent field service provider with its own actively maintained online panel of people aged 16 to 79. Survey type, survey content, and target group of the survey were defined in advance as part of the above-mentioned research project. Infas quo GmbH converted the paper version of the survey questionnaire into the online questionnaire.

Participants were recruited from the actively maintained online panel of infas quo GmbH. Panel members had previously agreed to be contacted for participation in scientific surveys. Invitations were distributed electronically, and participation was voluntary. Eligibility criteria for the present study included an age of at least 18 years and provision of informed consent. To ensure high data quality, infas quo GmbH conducted continuous quality monitoring and applied established industry standards, including ISO 20252 certification and the ESOMAR 28 quality criteria for online panels. Furthermore, respondents exhibiting excessively rapid completion times or systematic response patterns were excluded during quality-control procedures.

All potential participants were informed prior to participation about the content, objectives, and dura-

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tion of the survey, the inclusion criterion (minimum age 18 years), the data protection guidelines, the voluntary nature of participation, and contact options for any queries. All potential participants also had to explicitly agree to the data protection guidelines and informed participation by clicking on the corresponding button before actually participating.

MEASURES

The standardized online survey included questions on sociodemographic information, feelings of guilt, and other psychological constructs. The following collected information was analyzed for this report.

Sociodemographic characteristics. Collected information on age, gender and education was analyzed. Education was divided into three categories depending on the highest school-leaving qualification achieved: ‘Low education’ was assigned to participants without a school-leaving qualification, or with the German qualifications *Haupt-/Volksschulabschluss*, which usually correspond to eight to nine years of schooling. ‘Medium education’ was assigned to participants with the German qualifications *Realschulabschluss/Mittlere Reife/Fachschulreife/Polytechnische Oberschule*, which usually correspond to ten years of schooling. ‘High education’ was assigned to participants with the German qualifications *Fachhochschulreife/Abschluss einer Fachoberschule/Abitur*, which usually correspond to more than ten years of schooling.

Guilt proneness. In this study, guilt proneness was assessed using the eight corresponding items of the Guilt and Shame Proneness Scale (GASP; Cohen et al., 2011). The GASP uses a scenario-based approach, presenting participants with everyday situations in which one might typically feel guilty or ashamed, along with typical responses to such situations. Respondents are asked to place themselves in each scenario and rate how likely they would be to respond in the described manner on a scale from 1 (*very unlikely*) to 7 (*very likely*). The eight guilt proneness items and the eight shame proneness items are divided into two subscales of four items each. Regarding the two guilt proneness subscales, one focuses on the ability to feel bad about how one would have responded (Negative Behaviour Evaluation; Guilt-NBE subscale), and the other focuses on the tendency to correct or compensate for described transgressions or failures (Guilt-Repair subscale). The GASP is scored by averaging the four items in each subscale. Higher scores indicate greater endorsement of the guilt (or shame) response. For a more comprehensive description of the GASP and its guilt (and shame) subscales, see Cohen et al. (2011).

Depressive symptoms. Screening for depressive symptoms was carried out using the two-item Patient Health Questionnaire (PHQ-2; Kroenke et al., 2003; Löwe et al., 2005). This self-report questionnaire

covers the main symptoms of depression: depressed mood and anhedonia (loss of interest/pleasure). Participants are asked how often they have experienced such symptoms over the past two weeks. Participants are asked to score each answer from 0 (*not at all*) to 3 (*nearly every day*). The PHQ-2 total score ranges from 0 to 6, with higher scores indicating a stronger presence of depressive symptoms. The PHQ-2 is a screening instrument and does not provide a clinical diagnosis of major depressive disorder. A score of ≥ 3 indicates a positive screen for probable major depression (Kroenke et al., 2003).

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STATISTICAL ANALYSIS

Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 30.0. Statistical significance was set at $p < .05$ (two-tailed).

To improve the representativeness of the findings, weighting factors provided by infas quo GmbH were used. Weighting factors were incorporated using the standard weighting procedures available in SPSS. The weighting was intended to adjust estimates to better reflect the population distribution and was applied consistently across all inferential analyses. The weighting factors were based on the distribution of age, gender, and federal state in the German population according to the German Microcensus and were intended to adjust for deviations between the study sample and the target population. The Microcensus is an official statistical survey conducted annually in Germany and uses a representative sample of approximately one percent of the German population and households (<https://www.forschungsdatenzentrum.de/en/household/microcensus>). Consequently, all analyses examining guilt proneness and associated factors were conducted using weighted data. In contrast, unweighted sample characteristics are presented in the sample description and Table 1 to facilitate a transparent description of the study participants.

The extent of guilt proneness was described by calculating weighted means, standard deviations (SDs), ranges, and proportions for the two GASP guilt subscales, Guilt-NBE and Guilt-Repair.

Group differences in guilt proneness were examined using Mann-Whitney *U* tests and Kruskal-Wallis *H* tests. For significant Kruskal-Wallis tests, *p*-values for post-hoc multiple comparisons were adjusted using the Bonferroni-Holm procedure.

Associations between age and guilt proneness were examined using Spearman rank correlations.

To investigate the simultaneous associations of sociodemographic characteristics and depressive symptomatology with guilt proneness, two separate multivariable linear regression models were calculated. The dependent variables were the Guilt-NBE and Guilt-Repair subscale scores. Independent variables

included age (continuous), gender (male vs. female), educational level (low, medium, high), and PHQ-2 screening status (< 3 vs. ≥ 3). Standardized regression coefficients (β) and coefficients of determination (R^2) are reported.

No missing data were observed for the variables included in the analyses; therefore, all analyses were based on the complete sample of 1,070 participants.

RESULTS

SAMPLE

A total of 1,500 members of the infas quo GmbH online panel were invited to participate in the online survey, of whom 1,122 took part (a gross participation rate of 74.8%). Of these respondents, 52 (4.6%) were excluded from the analysis due to serious deficiencies in the completion of the online survey (e.g., excessive speed or patterns in data entry) identified by infas quo GmbH's quality control. After excluding these participants' data, infas quo GmbH provided final data sets from a sample of 1,070 adults for analysis

Table 1

Sample characteristics (N = 1,070)

Characteristic	Mean (SD)	Range	n	%
Age (in years)	48.7 (15.3)	18-79		
18-29			169	15.8
30-39			187	17.5
40-49			170	15.9
50-59			218	20.4
60-69			245	22.9
70-79			81	7.6
Gender	–	–		
Female			566	52.9
Male			504	47.1
Education	–	–		
Low			124	11.6
Medium			374	35.0
High			572	53.5
PHQ-2 total score	1.7 (1.6)	0-6		
< 3			821	76.7
$\geq 3^a$			249	23.3

Note. PHQ-2 = 2-item Patient Health Questionnaire (Kroenke et al., 2003; Löwe et al., 2005). ^aA total score of ≥ 3 on the PHQ-2 indicates the probable presence of major depression (Kroenke et al., 2003).

(net participation rate = 71.3%). Of these, 566 (52.9%) stated their gender as female and 504 (47.1%) as male. The mean age was 48.7 years ($SD = 15.3$ years). More than half of the study sample (572/53.5%) had a high level of education. A total score of ≥ 3 on the PHQ-2, indicating the probable presence of major depression, was found in 249 participants (23.3%). For more details on these sample characteristics, as well as the Big Five Inventory Short (BFI-S) personality characteristics of the participants, see Table 1.

GUILT PRONENESS

The weighted mean score for the Guilt-NBE subscale of the GASP, indicating the tendency to experience negative feelings in response to described transgressions or failures, was 5.6 ($SD = 1.3$) for the overall study sample. The observed range of the weighted mean score for the Guilt-NBE subscale was 1 to 7. A total of 5.1% of the study sample reported that it would have been slightly unlikely, moderately unlikely, or very unlikely that they would have felt bad (weighted mean scores of 1.00-3.49) about described transgressions or failures. The weighted mean score for the Guilt-Repair subscale of the GASP, which measures the tendency to correct or compensate for transgressions or failures, was also 5.6 ($SD = 1.0$). The observed range was also 1 to 7, with 2.9% of the sample reporting a tendency to repair missteps or setbacks that was slightly unlikely to very unlikely (weighted mean scores of 1.00-3.49).

Significant correlations were found between older age and higher scores on both guilt subscales (Guilt-NBE subscale: Spearman's $\rho = .173$, $p < .001$; Guilt-Repair subscale: Spearman's $\rho = .159$, $p < .001$). When the study sample was divided into different age groups, the highest scores on the guilt subscales were found in the 70-79 age group (Guilt-NBE subscale: mean = 6.0, $SD = 1.0$; Guilt-Repair subscale: mean = 5.8, $SD = 0.9$; see Table 2 and Figure 1). On average, guilt subscale scores were also significantly higher in women than in men, but no significant differences were found with regard to education or probable presence of major depression (PHQ-2 total score of ≥ 3 vs. < 3 (see Table 2).

As shown in Table 3, multivariable linear regression results essentially confirmed the previously presented findings, except that a higher level of education was also significantly associated with a higher Guilt-NBE subscale score (see Model I).

DISCUSSION

The aim of this study was to provide empirical information on guilt proneness and associated factors in the German adult population by analyzing weighted

Table 2

Group differences in GASP guilt subscale scores ($N = 1,070$)^a

Characteristic	Guilt-NBE subscale			Guilt-Repair subscale		
	Mean (SD)	Statistical test results for group differences	p	Mean (SD)	Statistical test results for group differences	p
Age (in years)		Kruskal-Wallis $H = 37.03$	< .001		Kruskal-Wallis $H = 29.28$	< .001
18-29	5.5 (1.2)			5.5 (1.0)		
30-39	5.3 (1.1)			5.4 (1.0)		
40-49	5.4 (1.3)			5.5 (1.1)		
50-59	5.6 (1.4)			5.6 (1.2)		
60-69	5.8 (1.2)			5.8 (0.9)		
70-79	6.0 (1.0)			5.8 (0.9)		
Gender		Mann-Whitney $U = 119,101.00$	< .001		Mann-Whitney $U = 127,362.50$	< .001
Female	5.8 (1.2)			5.7 (1.0)		
Male	5.3 (1.3)			5.5 (1.3)		
Education		Kruskal-Wallis $H = 0.74$	.692		Kruskal-Wallis $H = 1.91$	.386
Low	5.5 (1.3)			5.5 (1.2)		
Medium	5.5 (1.3)			5.6 (1.1)		
High	5.6 (1.2)			5.6 (1.0)		
PHQ-2 total score		Mann-Whitney $U = 105,214.00$	.749		Mann-Whitney $U = 99,960.50$	.131
< 3	5.6 (1.3)			5.6 (1.0)		
$\geq 3^b$	5.6 (1.1)			5.5 (1.0)		

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Note. GASP – Guilt and Shame Proneness Scale (Cohen et al., 2011); NBE – Negative Behaviour Evaluation; PHQ-2 – 2-item Patient Health Questionnaire (Kroenke et al., 2003; Löwe et al., 2005). ^aResults are based on data weighted for the age, gender, and German federal state of residence of the participants. ^bA total score of ≥ 3 on the PHQ-2 indicates the probable presence of major depression (Kroenke et al., 2003).

data from $N = 1,070$ adults who participated in a standardized nationwide online survey.

With observed weighted mean scores of 5.6 (on a scale of 1 to 7, where higher scores indicate greater guilt proneness) for both the Guilt-NBE and the Guilt-Repair subscale of the GASP, guilt proneness, reflected in negative self-evaluation following transgressions or failures and the tendency to correct or compensate for them, was relatively high in this sample of German adults.

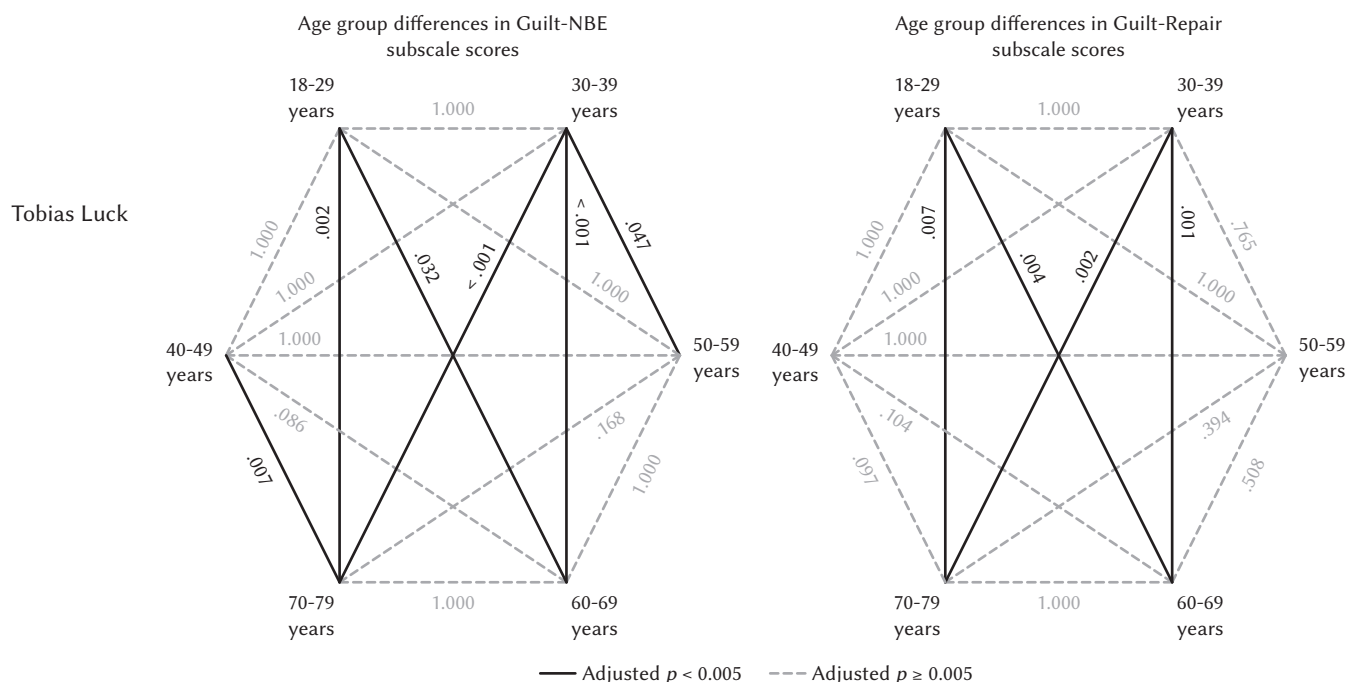
These findings are consistent with those of an online survey conducted in the United States with $N = 862$ adults (Cohen et al., 2011). The authors reported mean scores of 5.7 ($SD = 1.1$) for women and 5.1 ($SD = 1.3$) for men on the Guilt-NBE subscale, and 5.7 ($SD = 0.9$) for women and 5.5 ($SD = 1.1$) for men on the Guilt-Repair subscale (overall scores for the total sample were not reported). Previous research using the GASP has also reported associations between lower guilt proneness and indicators of unethical behavior (Cohen et al., 2011). However, such

outcomes were not assessed in the present study. Consequently, no conclusions can be drawn regarding the behavioral implications of lower guilt proneness scores in the German adult population. Future studies should investigate whether similar associations can be observed in representative German samples. The analysis of the association between guilt results and sociodemographic characteristics revealed that women and older age groups had significantly higher guilt subscale values (i.e., higher guilt proneness) than men and younger age groups. Regarding education, a significant positive association was found only for the Guilt-NBE subscale, and only in the multivariable linear regression analysis. The results for age and gender differences are thus consistent with the results of Cohen et al. (2011; the authors did not investigate the influence of education).

Any observed differences in outcomes between various sociodemographic groups must be interpreted with extreme caution to avoid reproducing or even reinforcing existing stereotypes. With regard

Figure 1

Age group differences in GASP guilt subscale scores – results of the pairwise comparisons with the significance values adjusted for multiple comparisons using the Bonferroni-Holm corrections ($N = 1,070$)^a



Note. GASP – Guilt and Shame Proneness Scale (Cohen et al., 2011); NBE – Negative Behaviour Evaluation. ^aResults are based on data weighted for age, gender, and German federal state of residence of participants.

Table 3

Results of multivariable linear regression analyses on the association between GASP guilt subscale scores and age, gender, education, and major depression ($N = 1,070$)^a

	Regression model I: Guilt-NBE subscale ^b		Regression model II: Guilt-Repair subscale ^c	
	Standardized β	p	Standardized β	p
Age, every additional year	.18	< .001	.16	< .001
Gender, male vs. female	-.20	< .001	-.14	< .001
Education, ascending school-leaving qualification ^d	.08	.007	.04	.177
PHQ-2 total score, ≥ 3 ^b vs. < 3 ^e	.04	.164	-.01	.834

Note. GASP – Guilt and Shame Proneness Scale (Cohen et al., 2011); NBE – Negative Behaviour Evaluation; PHQ-2 – 2-item Patient Health Questionnaire (Kroenke et al., 2003; Löwe et al., 2005). ^aResults are based on data weighted for the age, gender, and German federal state of residence of the participants. ^b R^2 of the model = .060; ^c R^2 of the model = .036. ^d0 = low, 1 = medium, 2 = high. ^eA total score of ≥ 3 on the PHQ-2 indicates the probable presence of major depression (Kroenke et al., 2003).

to gender, for example, Else-Quest et al. (2012) conducted a meta-analysis of studies investigating potential gender differences in several self-conscious emotions, such as guilt, shame, pride, and embarrassment. Even though they found small gender differences with regard to guilt ($d = -0.27$), these differences depended largely on the ethnicity of the sample, the assessment of guilt, and other factors. The authors concluded that their findings contribute to the literature demonstrating that blanket stereo-

types about women's greater emotionality are inaccurate (Else-Quest et al., 2012, p. 947). Previous findings from our research also contradict such blanket gender stereotypes, as demonstrated by the results of a large German population-based telephone survey, which found no significant gender differences with regard to point and lifetime prevalence of actual experienced feelings of guilt (Luck & Luck-Sikorski, 2021a, 2021b). These results in comparison with the current results – no gender differences in actual ex-

perienced feelings of guilt, but differences in guilt proneness – also highlight the important point that the specific construct of guilt under investigation and its assessment should significantly influence possible differences between sociodemographic groups.

The same should be true for our findings on possible age-related differences. Although guilt proneness was significantly higher in older age groups, previous studies showed no significant age-related differences in the prevalence of experiencing feelings of guilt at a given point in time (Luck & Luck-Sikorski, 2021b). Regarding the lifetime prevalence of experiencing feelings of guilt, the opposite of the current findings has been found: a lower prevalence in older age groups than in younger ones (Luck & Luck-Sikorski, 2021a). The 2021 study lists several possible explanations for these seemingly paradoxical findings of a lower lifetime prevalence among older adults, such as the socioemotional selectivity theory (e.g., Charles et al., 2016; Mather & Carstensen, 2005). This theory, for example, suggests that older adults are biased towards positive information and memories in their cognitive processing. Regarding the likewise seemingly paradoxical findings of lower lifetime prevalence of experienced guilt and higher guilt proneness in older age, one could speculate that older people are more sensitive to prosocial and ethical behavior due to life experience. This sensitivity may be reflected in higher guilt proneness, which “protects” them from concrete actions that could lead to guilt. But again, these are speculations that, moreover, require further research, bearing in mind the aforementioned danger of reproducing or even reinforcing existing stereotypes.

Another complex relationship emerges between guilt proneness and depression. Consistent with previous research, the present study found no significant association between guilt proneness and a positive screen for probable major depression (see also Tangney et al., 2007). Similarly, Cohen et al. (2011), who developed the GASP, reported a negative association between the Guilt-NBE subscale and depressive symptoms and suggested that guilt proneness may be linked to adaptive psychological functioning.

At the same time, previous research has shown that actually experienced feelings of guilt may be associated with depression (Luck & Luck-Sikorski, 2021a, 2021b). Taken together, these findings suggest that guilt proneness as a dispositional characteristic and experienced feelings of guilt as an emotional state may show different relationships with depressive symptoms. However, the cross-sectional design of the present study does not permit conclusions regarding the direction or mechanisms of these associations. Further research is needed to clarify the potentially distinct roles of guilt proneness and experienced guilt in relation to depression.

When interpreting the results of this study, it is important to consider some limitations (see Luck, 2024).

The results were obtained through an online survey. This approach was chosen in particular because of the assumption that adults are more willing to make statements about a sensitive topic like feelings of guilt in an anonymous online survey than, for example, in a (more personal) telephone or face-to-face survey, and are therefore less likely to do so in a socially desirable manner. To ensure the highest possible data quality, even with this form of data collection, the online survey was conducted in collaboration with an established, independent field service provider that has its own actively maintained online panel. Weighting factors were used in the analyses to compensate for deviations in the sample’s age, gender, and state distribution compared to the corresponding total population. This enabled more representative statements to be made about the population. However, there are still limitations that may restrict the generalizability of the results. For instance, individuals lacking internet access, access to online surveys, or the necessary digital skills were unable to participate.

CONCLUSIONS

Despite the aforementioned limitations, the present study provides population-based estimates of guilt proneness in a large sample of German adults. Guilt proneness, as measured by the GASP guilt subscales, was generally high among the participants and showed significant associations with age and gender. In contrast, no significant association was observed between guilt proneness and a positive screen for probable major depression. The findings contribute to the limited literature on guilt proneness in the general adult population and provide initial reference data for Germany. At the same time, the observed differences across sociodemographic groups should be interpreted cautiously and require further investigation. Future research should examine guilt proneness in relation to a broader range of psychological, social, and behavioral outcomes and should further explore the distinction between guilt proneness as a personality characteristic and the experience of guilt.

DISCLOSURES

This research received no external funding. The study was approved by the ethics committee of the University Hospital Jena (Approval No. 2022-2796-Bef). The author declares no conflict of interest.

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