

# Development and Validation of the Interpersonal Hate Questionnaire (IHQ)

Lobsang Rapgay

Megan Conchar

Julian R Keith  



## Abstract

This series of studies developed and validated a multidimensional measure of interpersonal hate, the Interpersonal Hate Questionnaire (IHQ). Using three independent samples ( $N_1 = 221$ ,  $N_2 = 183$ ,  $N_3 = 360$ ), we conducted exploratory and confirmatory factor analyses that revealed three robust dimensions of interpersonal hate: Fear of Social Consequences, Dehumanization, and Aggressive Urges. The IHQ demonstrated excellent internal consistency ( $\alpha = .93$ ) and construct validity through significant correlations with related psychological constructs. Fear of Social Consequences showed the strongest relationship with anxiety ( $r = .49$ ,  $p < .001$ ), while Aggressive Urges correlated most strongly with anger rumination ( $r = .50$ ,  $p < .001$ ). The IHQ showed good model fit (TLI = 0.946, RMSEA = .059) and factorial consistency across diverse samples. These findings advance our understanding of hate as a distinct emotional construct and provide a reliable tool for assessing its key dimensions. The scale's strong psychometric properties and clear factor structure make it valuable for applications in understanding and addressing interpersonal hate.

## Registration

The study was not pre-registered. It was an exploratory study attempting to initiate the development of a new scale. The methods section of the manuscript completely describes all aspects of the development process as they occurred.

## Materials

<https://osf.io/7av9u/>

## **Data**

*<https://osf.io/7av9u/>*

**Code**

Not Applicable.

## Paper

### **Development and Validation of the Interpersonal Hate Questionnaire (IHQ)**

**Lobsang Rapgay, Megan Conchar, Julian R Keith**

The complexity of hate as an emotional and social phenomenon has intrigued scholars since Aristotle, who distinguished it from anger by its enduring nature (Müller, 2022). Despite this long-standing interest, psychological research has focused mainly on intergroup hate while focusing less on interpersonal hate as a distinct construct. This gap is particularly notable given interpersonal hate's significant role in individual well-being, relationship dynamics, and social functioning (Fitness & Fletcher, 1993; Halperin et al., 2011). Interpersonal hate, as used here, refers to an enduring hostility directed at an individual, typically arising from personal grievances or conflicts in direct relationships. Unlike group-based hate, which targets collectives based on shared traits, or ideological hate, which stems from opposing beliefs, interpersonal hate is specific to personal dynamics. Interpersonal hate is personal, focusing on individual relationships rather than broader societal or ideological contexts.

## **Theoretical Framework**

Contemporary theories of emotion suggest that hate exists within a complex network of affective experiences, distinct from but related to other negative emotions such as anger, contempt, and disgust (Barrett, 2017; Ekman, 1992a). Three main theoretical perspectives have shaped our understanding of interpersonal hate. First, the primary emotion framework (Allport, 1954; Ekman, 1992b) conceptualizes hate as a primary emotional response arising from perceived threats to physical or psychological well-being. Second, Sternberg's (2003) triangular theory positions hate as the negation of intimacy and positive passion, suggesting it emerges from the breakdown of close relationships. Third, the social-functional approach (Fitness & Fletcher, 1993; Martínez et al., 2022) emphasizes hate's role in regulating social relationships and maintaining psychological boundaries.

These perspectives, while valuable, have not fully captured the multidimensional nature of interpersonal hate or provided clear operational definitions for measurement. This theoretical gap has practical implications: without precise measurement tools, researchers cannot effectively study hate's relationship to other psychological constructs or its role in individual and social outcomes.

## **Distinguishing Interpersonal from Intergroup Hate**

Recent research has highlighted crucial distinctions between interpersonal and intergroup hate. While intergroup hate often manifests as attack-oriented behaviors motivated by group destruction (Mackie et al., 2000), interpersonal hate typically involves avoidance and self-protective behaviors (Aumer & Bahn, 2016). This distinction suggests that interpersonal hate may serve different psychological functions and operate through different mechanisms than intergroup hate, necessitating distinct measurement approaches.

Martínez et al. (2022) found that interpersonal hate differs from related emotions in its higher psychological arousal, heightened personal threat perception, unique behavioral manifestations, and temporal persistence. However, existing measures have not adequately captured these distinguishing features, limiting our ability to study interpersonal hate's unique contributions to individuals' psychological functioning and social behavior.

## **Current Research Goals and Hypotheses**

The present research addressed these gaps through three interrelated studies developing and validating the Interpersonal Hate Questionnaire (IHQ). We hypothesized that:

H1: Interpersonal hate comprises distinct dimensions reflecting its cognitive, emotional, and behavioral components.

H2: These dimensions will show different patterns of relationships with related constructs such as anger rumination, anxiety, and empathy.

H3: The factor structure will remain stable across different populations and demographic groups.

This research contributes to the field in several ways. First, it provides a psychometrically sound tool for measuring interpersonal hate, enabling more precise research into its causes and consequences. Second, it empirically tests theoretical predictions about hate's multidimensional nature. Third, it establishes a foundation for investigating how interpersonal hate relates to other psychological constructs and behavioral outcomes.

Understanding these dimensions has practical implications for clinical interventions, relationship counseling, and conflict resolution. By identifying specific components of interpersonal hate, practitioners can develop more targeted interventions addressing its distinct aspects rather than treating it as a unitary construct.

## Method

### Transparency and Openness

This study's design and its analysis were not preregistered. All data, analysis code, and research materials are available upon request from the corresponding author. Data were analyzed using Jamovi version 2.6.2.0 (The Jamovi Project, 2022).

### Participants

These studies were reviewed by the IRB Office and were determined to be exempt from further review according to the regulatory category cited above under 45 CFR 46.104(d) (#22-0257). The first two study samples were recruited through a research participation and management tool (SONA) that connects undergraduate students to psychology department research projects at the University of North Carolina, Wilmington. We acknowledge that the first two sample's participant demographic do not adequately represent the broader population's experiences and perceptions of hate. While this initial sampling approach had demographic limitations, beginning with undergraduate students provided a controlled environment to develop the survey instruments and establish baseline measurements before expanding to more diverse populations. The third study recruited a more diverse study sample (described later).

We informed participants about the study's purpose, that their participation partially satisfied course research experience requirements, and provided informed consent. We collected only non-identifying demographic information and administered the survey using a secure online platform, Qualtrics (2023). The initial sample included 323 participants. We excluded 14 because they were under 18 years old, 43 because they denied having any person come to mind when trying to think of someone whom they hated, 37 who gave incorrect responses on elementary attention check questions embedded in the survey, and eight who completed the survey in less than three minutes. Of the remaining 221 that comprised the study sample analyzed, the mean age was 19 years ( $SD = 2.52$ ; range 18–45) and included 189 females, 30 males, one nonbinary, and one transgender male. Regarding race, 194 were White, 16 were mixed race, four were Asian, three were Black or African American, three were identified as Other, and one was Pacific Islander. Sixteen participants identified as Hispanic.

## Instrument Development

We generated a pool of items based on the literature review on hate and the authors' deliberations. The interpersonal hate questionnaire items were based on existing theories of hate and anger (Halperin et al., 2011; Martínez et al., 2022; Tescher et al., 1999). We hypothesized five dimensions of interpersonal hate that included aggressive urges (e.g., lashing out, hitting or throwing things, yelling, or cursing), belief that the hated person is depraved (e.g., perceptions that the hated person is disgraceful, immoral, or mean), fear of the hated person (e.g., fear of physical or emotional harm), feeling powerless to deal with (e.g., feeling as if one has no control, feeling like one will lose control), and perceiving the hated person as vile (e.g., identifying the hated person as toxic, despicable, inhuman, or nauseating). Colleagues with social and clinical psychology expertise and experience in survey development reviewed items to ensure content validity and relevance to the study's research questions. A preliminary version of the survey instrument was pilot-tested with a small sample of participants to assess its clarity and comprehensibility, and we revised or removed unclear or irrelevant items. The items used are provided in the supplementary materials (Table S1).

## Procedures

We arranged the questionnaire in Qualtrics in three sections. The first section included an informed consent document, demographic questions, and instructions. The instructions asked people to spend one minute recalling someone (or multiple individuals) for whom they would describe themselves as hating. Then, we asked them if anyone came to mind. If they answered no to this question, we omitted their data from the analysis ( $n = 43$ ). The second section of the survey asked participants to report the vividness of their experience on an 8-point scale (0 = none at all, 7 = extremely strong). Then we asked them to report bodily reactions (feeling physically hot, light-head or dizzy, pounding or racing heart, muscle tightness or clenching fist, blood rushing to face or flushing) while thinking about the person(s) who they recalled hating (0 = none at all, 7 = extremely strong). The third section of the survey, which comprised 28 items, was comprised of the interpersonal hate questionnaire. We included two additional simple math questions as attention-check items. We collected data from the first sample from September 15, 2022, through February 3, 2023. The survey took an average of 6.33 (SD 4.15) minutes.

## Data Analysis

We conducted all statistics using Jamovi software (The Jamovi Project, 2022). Pearson correlation coefficients ( $r$ ) were used to assess the strength of relationships between the vividness of the

memory of the hated person(s). They reported bodily reactions and correlations between the different physical responses. We used Cronbach's  $\alpha$  to quantify the internal consistency and reliability of the survey items. To determine what and how many constructs underlie the variables in the hate questionnaire, we conducted a series of exploratory factor analyses using minimum residual extraction methods combined with promax rotations and parallel analysis. We used Pearson's Product Moment Correlations to quantify relationships between factors revealed by factor analysis and the vividness of subjective memories evoked by remembering hated people. We report all inferential statistical test probabilities as two-tailed tests, and the alpha level used to reject the null hypothesis is 0.05. For factor analysis models, missing values were handled using the full information likelihood method.

## Results and Discussion

As mentioned in the *Participants* subsection, the initial sample of 323 participants included 14 who were under 18 years old, 43 who denied having any person come to mind when they tried to think of someone whom they hated, 37 who gave incorrect responses on attention check items, and eight who completed the survey in less than three minutes, leaving 221 used in the analysis presented here.

For survey items regarding the vividness of recall of a hated person or multiple people and bodily reactions that accompanied the memory, participants reported experiencing a moderately vivid recall of the person or persons they hated ( $M = 4.67$ ,  $SD = 1.51$ , on an 8-point Likert scale) and noticing mild physical sensations associated with the memory (Table S2 included in supplementary materials provides descriptive statistics for individual items).

As seen in Table 1, more vivid memories of hated people were positively related to reports of stronger physical reactions, reflected in significant correlations between memory recall vividness and self-reported body sensations. Thus, the brief prompt to bring to memory people participants hate successfully activated relevant memories. We reasoned that priming participants to think about a person they hated would enhance their ability to answer questions about factors contributing to their hatred for these people, which we wished to assess with the IHQ survey items.

**Table 1**

*Correlation (Pearson  $r$ ) Between the Vividness of Recall of Hated Persons and Self-Reported Physical Reactions.*

	Hot	Dizzy	Heart	Tightness	Flushing	Total
Vividness	0.30***	0.153*	0.25***	0.21**	0.197**	0.29***

Note. Vividness of memory (Vividness), feeling physically hot (Hot), light-headedness or dizzy (Dizzy), pounding or racing heart (Heart), muscle tightness or clenched fists (Tightness), blood rushing to face, flushing (Flushing), total summed across all physical reactions (Total).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## Exploratory Factor Analysis

Bartlett's Test of Sphericity was significant ( $\chi^2(378) = 2978$ ,  $p < .001$ ), and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.913, indicating that the data were suitable for factor analysis.

The Cronbach's alpha coefficient for our scale/items was 0.93, indicating excellent internal consistency and Cronbach's alpha coefficients for all individual items were greater than 0.92. This value exceeds the commonly accepted threshold of 0.9 for excellent reliability (Nunnally & Bernstein, 1994), affirming that the items in the scale consistently measure the same underlying construct. An exploratory factor analysis using a minimum residuals extraction method in combination with a Promax rotation based on parallel analysis was used to determine what and how many constructs underlie the variables in the hate questionnaire. In the first model, we excluded factors with eigenvalues less than one and factor weights below 0.5. A scree plot showing eigenvalue as a function of factors is provided in the supplementary materials (Figure S1). The scree plot presents eigenvalues for each factor model generated by the EFA, and a three-factor model fits the data well.

The Kaiser-Meyer-Olkin measure confirmed the sampling adequacy for the analysis,  $KMO = 0.91$ , and all KMO values for individual items were above 0.70, above the acceptable limit of 0.50 (Kaiser, 1974). Bartlett's test of sphericity,  $\chi^2(378) = 2978$ ,  $p < .001$ , showed that correlations between items were sufficiently large for EFA.

The initial analysis revealed a four-factor structure (the factor structure and loadings of the model are provided in supplementary materials Table S3). The cumulative variance explained by the four factors was 48.2%, with Factor 1 explaining 15.5%, Factor 2 explaining 11.7%, Factor 3 explaining 10.3%, and Factor 4 explaining 10.8%. The factor loadings for the items ranged across the four factors. Factor 1 included items such as "Toxic" (0.790), "No Respect" (0.783), and "Avoid Them" (0.751). Factor 2 included items such as "Lash Out" (0.879), "Yell" (0.843), and "Curse" (0.734). Factor 3 included items such as "Soc Rep" (0.809), "Fear Retaliation" (0.693), and "Prof Rep" (0.677). Factor 4 included items such as "Evil" (0.750), "Inhuman" (0.597), and "Dirty" (0.548).

The uniqueness values indicated that several items had high uniqueness, notably "Unconcerned" (0.601), "Look Down" (0.665), and "Self-Control" (0.634), suggesting they do not fit well with any

single factor.

The chi-square goodness-of-fit test showed that the model fit the data well,  $\chi^2(272) = 422$ ,  $p < .001$ . Further evaluations of the fit of the model showed that the root-mean-square error of approximation (RMSEA) was 0.049, which indicates a close fit to the data (MacCallum et al., 1996), the Tucker-Lewis index (TLI) was 0.918, however, which is below the 0.95 level recommended by Hu & Bentler (1999).

We conducted an iterative refinement process to optimize model fit and improve construct clarity, focusing on items with high uniqueness values and cross-loadings. Items that did not load substantially on any factor (factor loadings  $< 0.4$ ) were eliminated from the model. These included "Immoral," "Nauseous," "Harm," "Fear Bodily Harm," and "Lose Control." Additionally, items with high uniqueness values ( $> 0.6$ ), indicating a large proportion of unexplained variance, were removed. This criterion led to the exclusion of "Unconcerned," "Look Down," and "Self-Control." Furthermore, we removed items that exhibited significant cross-loadings ( $> 0.32$ ) on multiple factors to ensure factor distinctiveness. Consequently, the "Despise Them" item was eliminated due to its complex factor structure. This systematic approach to item reduction enhanced the model's parsimony and interpretability while maintaining its theoretical integrity.

The new model satisfied the assumptions for a valid analysis; Barlett's Test of Sphericity  $\chi^2(91) = 1322$ ,  $p < .001$ , and the KMO Measure of Sampling Adequacy was 0.885. A scree plot showing changes in eigenvalue as a function of factors is provided in the supplementary materials (Figure S2). The refined model demonstrates several improvements over the initial model. The cumulative variance explained increased from 48.2% to 57.2%, indicating that the refined model captures more variance within the data. The model fit indices also improved substantially, with the RMSEA decreasing from 0.0498 to 0.0183 and the TLI increasing from 0.918 to 0.994. These indices suggest a better overall fit for the refined model ( $\chi^2(41) = 44.2$ ,  $p = 0.337$ ). The variance explained by each factor was Factor 1: 20.5%, Factor 2: 16.96%, Factor 3: 12.54%, Factor 4: 7.16%. The factor loadings for the refined model are provided in the supplementary material (Table S4).

Overall, the refined model provides a more accurate and robust representation of the underlying constructs associated with the psychology of hate.

## **Factor 1: Aggressive Urges**

Factor 1 is the urge to be aggressive or violent toward the hated person. All the items within this factor refer to the desire to verbally or physically express rage at the hated person (e.g., the urge to lash out, yell, curse, rage, hit, or throw things). One item refers to the experience of uncontrollable anger (i.e., rage), suggesting the potential for violence. High scores on this factor may reflect explicit or implicit ideas of harming their hated target. The factor loadings of these

items were “Lash Out” (0.876), “Yell” (0.819), “Curse” (0.739), “Rage” (0.660), “Hit or Throw” (0.626) and, collectively, they account for 20.5% of the variance in the data.

## **Factor 2: Social Dismissal**

Factor 2 comprised four items (e.g., I avoid them, they are toxic, I have no respect for them, they are mean). This factor may reflect the degree to which one thinks the person they hate is unkind and should be avoided. Their loadings were “Avoid Them” (0.776), “Toxic” (0.763), “No Respect” (0.727), and “Mean” (0.568). This factor explained 16.96% of the variance in the data.

## **Factor 3: Dehumanization**

Factor 3 represents the Dehumanization of the hated target and comprises three items: the hated person is evil, inhuman, and dirty. Factor 4 loadings were “Evil” (0.948), “Inhuman” (0.542), and “Dirty” (0.538), accounting for 12.54% of the variance in the data.

## **Factor 4: Fear of Social Consequence**

The two items comprising Factor 4 represent the fear of being socially or emotionally harmed by the hated person. The factor loadings for these items were “Soc Rep” (0.835) and “Fear of Retaliation” (0.546), together explaining 7.1% of the variance in the data.

The items included in the initial questionnaire showed excellent internal consistency. The key findings are as follows: participants who reported experiencing moderately vivid memories of individuals they hated also reported feeling mild physical sensations associated with these memories. The more vivid the memories were, the stronger the associated physical reactions. The iterative EFA process uncovered four underlying constructs of the interpersonal hate questionnaire, and a well-fitting four-factor model emerged. The factors identified in the four-factor model were: 1) aggressive urges toward the hated person. 2) social dismissal of the hated person. 3) dehumanization of the hated person, and 4) fear of social consequences that could result from acting on hate.

The initial proposed dimensions of interpersonal hate and the factors revealed by the exploratory factor analysis (EFA) differed in several ways. Initially, we hypothesized five dimensions: aggressive urges, a belief that the hated person is deprived, fear of the hated person, feeling powerless to deal with the situation, and perceiving the hated person as vile. However, the EFA revealed a four-factor structure that only partially aligned with these initial hypotheses. The final four factors were aggressive urges (which closely matched the initial hypothesis), social dismissal (which combined

elements of the proposed “depraved” and “vile” dimensions), Dehumanization (which captured highly negative perceptions of the hated person), and fear of social consequences (which was more specific than the initially proposed “fear” dimension). Notably, the hypothesized “powerlessness” dimension did not emerge as a distinct factor in the EFA results. This difference between the proposed and empirically derived factors highlights the complexity of hate as a psychological construct and the value of using statistical techniques like EFA to refine theoretical models.

## **Confirmatory factor analysis and validity**

In the next step, we collected new data for confirmatory factor analysis to evaluate further the factor structure obtained in the four-factor model. To assess the convergent and discriminant validity of the IHQ, we collected data on psychological variables related to the construct of interpersonal hate. The questionnaire previously described was used, and questionnaires (described below) designed to measure anger rumination, depression, anxiety, obsessive-compulsive traits, and empathy were added to the Qualtrics survey. We collected data from September 15, 2022, through February 3, 2023. The survey took 14.15 minutes to complete on average ( $SD = 7.52$  min).

## **Participants**

We recruited 200 undergraduate students for this phase of the study. Eleven were under 18, 28 did not complete the entire questionnaire, and eight submitted incorrect answers on the attention check questions. The sample used for the analysis presented below comprised 183 total participants. The mean age of participants was 19.48 years ( $SD = 3.82$ , range 18–54). The sample included 128 females, 22 males, two individuals identifying as nonbinary, and one transgender male. Regarding race, 129 identified themselves as White, 10 identified as mixed race, seven identified as Other, three identified as Black, three identified as Asian or Pacific Islander, and two identified as American Indian. Thirteen people identified as Hispanic.

Anger Rumination Scale (ARS). The ARS (Sukhodolsky et al., 2001) is a 19-item, self-rated screening inventory used to measure anger rumination or “the tendency to focus on angry moods, recall past anger episodes, and think over the causes and consequences of anger episodes.” The ARS has four sub-scales: Angry Afterthoughts, Thoughts of Revenge, Angry Memories, and Understanding of Causes. The ARS shows good internal consistency (Cronbach’s  $\alpha > 0.90$ ) and significantly correlates with other measures of anger and rumination, such as the State-Trait Anger Expression Inventory and the Ruminative Responses Scale (Sukhodolsky et al., 2001).

The Beck Depression Inventory- Second Edition (BDI-II). The BDI-II (Beck et al., 1996) is a 21-item self-report questionnaire for adults used to assess the severity of cognitive, affective, behavioral, motivational, and somatic symptoms of depression. Each item includes four response statements rated from 0 (absence of symptoms) to 3 (most severe level), representing the ascending severity of depressive symptoms. Scores range between 0 and 63, with higher scores indicating more responses consistent with depression (Storch et al., 2004).

Beck Anxiety Inventory (BAI). The BAI (Beck et al., 1988) is a 21-item self-report measure to assess anxiety symptoms. Items are rated on a 4-point Likert Scale ranging from 0 (not at all) to 3 (severely- it bothered me a lot). The total score is calculated by finding the sum of the 21 items, with higher scores indicating more endorsement of anxiety. The BAI has excellent overall internal consistency (Bardhoshi et al., 2016), high test-retest correlation ( $r = 0.67$ ) (Fydrich et al., 1992), and good test-retest reliability (Beck et al., 1988).

Obsessive-Compulsive Inventory-Revised (OCI-R). The OCI-R (Foa et al., 2002) is an 18-item self-report measure used to assess the distress caused by obsessive thinking and compulsive behaviors. The items are rated on a 5-point Likert scale ranging from 0 (not at all) to 5 (extremely) according to distress related to past-month symptoms. The 18 symptoms belong to six groups, with three items for each group: checking (e.g., "I repeatedly check doors, windows, drawers"), ordering ("I need things to be arranged in a particular way"), obsessing (e.g., "I find it difficult to control my own thoughts"), hoarding, neutralizing, and washing. The total score, which can range from 0 (if the person rated all 18 items as 0) to 72 (if the person rated all 18 items as 4), evaluates the severity of obsessive-compulsive symptoms.

Toronto Empathy Questionnaire (TEQ). The TEQ (Spreng et al., 2009) is a 16-item self-report measure that assesses respondents' perceptions of their empathetic abilities. The TEQ addresses various facets of empathy, including emotional contagion (e.g., "I remain unaffected when someone close to me is happy"), emotion comprehension (e.g., "I can tell when others are sad even when they do not say anything"), sympathetic physiological arousal (e.g., "When someone else is feeling excited, I tend to get excited too"), and altruism (e.g., "I get a strong urge to help when I see someone who is upset"). Items are scored on a scale from 0 (never) to 4 (always) and include both positive and negative statements such as "It upsets me to see someone being treated disrespectfully" and "I do not feel sympathy for people who cause their own serious illnesses."

## Results and Discussion

## Confirmatory Factor Analysis

The first model generated by the confirmatory factor analysis (CFA) comprised 13 variables distributed across four distinct factors. The model's reliability was assessed using Cronbach's alpha ( $\alpha$ ), which yielded a value of 0.93 (all items had Cronbach's alphas of at least .92). This high value indicates that the model demonstrates excellent internal consistency, suggesting that the items within each factor are well correlated and reliably measure the same underlying construct.

The model's fit to the data was evaluated using several statistical measures. First, the model significantly differed from a good fit,  $\chi^2(71) = 164, p < .001$ . Further, the Comparative Fit Index (CFI = 0.919), the Tucker-Lewis Index (TLI = 0.896), the Standardized Root Mean Square Residual (SRMR = 0.059), and the Root Mean Square Error of Approximation (RMSEA = 0.0927) do not meet the standards recommended by Hu and Bentler (1999) for indicating a good fit.

To refine the model, we examined modification indices to identify cross-loadings and correlated errors. We added covariance paths between the error terms for items with modification indices greater than 10. High residual covariances were observed for several items within the Aggressive Urges factor (e.g., Rage, Yell, Hit, or Throw). The item about the perception of the hated person(s) as "dirty" exhibited a notably high modification index (16.22). Such cross-loadings or error correlations can indicate that the item is not a pure measure of a single construct, potentially compromising the model's construct validity. Therefore, the decision was made to omit this item from the refined model to improve model parsimony and maintain construct clarity.

The refined model demonstrates substantial improvement in fit indices. The  $\chi^2$  test became non-significant, indicating a better fit ( $\chi^2(df = 42) = 46.5, p = 0.292$ ); RMSEA decreased from 0.0592 to 0.0346, suggesting a better fit to the data. CFI and TLI increased significantly to 0.995 and 0.992, respectively, indicating excellent fit. SRMR decreased from 0.0927 to 0.0265, also indicating better fit. All factor loadings remained significant ( $p < .001$ ) with slight adjustments, ensuring items reflect their respective factors adequately. "Avoid Them" and "Fear of Harm to Social Reputation" continued to show residual covariances with other items. Further model refinements allowed cross-loadings between those two items and correlating theoretically related items. For the refined model, the  $\chi^2$  test was non-significant ( $\chi^2(38) = 35.3, p = 0.594$ ), indicating an excellent fit, RMSEA decreased slightly to 0.0326, showing improved model fit, CFI increased to 1.00, and TLI to 1.01, indicating an excellent fit, and SRMR decreased to  $< 0.01$ , demonstrating a better fit. All factor loadings remained significant ( $p < .001$ ), with slight adjustments in standardized estimates, ensuring items reflect their respective factors adequately (see Table S4 in supplementary materials for statistics related to factor loadings).

The covariances among factors (Table 2) were significant ( $p < .001$ ), reflecting related but distinct constructs: Social Dismissal and Aggressive Urges (0.712), Social Dismissal and Fear of Social

Consequences (0.464), Social Dismissal and Dehumanization (0.7380, Aggressive Urges and Fear of Social Consequences: 0.673, Aggressive Urges and Dehumanization (0.746) (previously 0.741, and Fear of Social Consequences and Dehumanization (0.650).

				<b>Estimate</b>	<b>SE</b>	<b>Z</b>	<b>p</b>	<i>Stand. Estimate</i>
Social Dismissal	Social Dismissal	1.000	<sup>a</sup>					
	Aggressive Urges	0.712		0.0538	13.24	<.001	0.712	
	Fear of Social Consequences	0.464		0.1106	4.19	<.001	0.464	
	Dehumanization	0.738		0.0523	14.11	<.001	0.738	
Aggressive Urges	Aggressive Urges	1.000	<sup>a</sup>					
	Fear of Social Consequences	0.673		0.1223	5.51	<.001	0.673	
	Dehumanization	0.746		0.0510	14.62	<.001	0.746	
Fear								

of Social Consequences		Fear of Social Consequences		1.000	<sup>a</sup>								
		Dehumanization		0.650		0.1049		6.20		<.001		0.650	
Dehumanization		Dehumanization		1.000	<sup>a</sup>								
<sup>a</sup> fixed parameter													

A path diagram of the CFA model (Figure S3), as well as the items included in the model and their factor membership (Table S5), are provided in the supplementary materials.

To explore relationships between scores on the refined IHQ and variables such as anger rumination, depression, anxiety, obsession-compulsion, and empathy, we computed Pearson correlation coefficients between the IHQ and the ARS, BDI-II, BAI, OCI-R, and TEQ scores.

## Memory Vividness, Hate, and Physical Sensations

We found significant positive correlations between total score on the IHQ and memory vividness ( $r = 0.48, p < 0.001$ ) and physical sensations (e.g., flushing, heart pounding, muscle tension) reported while remembering a hated person ( $r = 0.37, p < 0.001$ ).

## Relationships Between Hate and Other Psychological Variables

We found a moderate correlation ( $r = 0.52, p < 0.001$ ) between total scores on the IHQ and ARS. Each of the subscales of the IHQ also significantly correlated with anger rumination (Social Dismissal  $r = 0.39$ ; Aggressive Urges  $r = 0.50$ ; Fear of Social Consequences  $r = 0.36$ ; Dehumanization  $r = 0.36$ ; all  $p$  values  $< 0.01$ ). Depression symptoms and hate significantly positively correlated;  $r = 0.27, p < 0.001$ . Anxiety symptoms significantly correlated with total scores on the IHQ ( $r = 0.45, p < 0.001$ ) and each of the subscales of the IHQ. Anxiety symptoms were most strongly associated with the Social Fear aspect of hate,  $r = 0.49, p < 0.001$ , followed by the

Aggressive Urges,  $r = 0.42$ ,  $p < 0.001$ . Anxiety symptoms were also correlated with Social Dismissal,  $r = 0.29$ ,  $p < 0.001$ , and Dehumanization,  $r = 0.29$ ,  $p < 0.001$ . Obsessive-compulsive symptoms correlated significantly with total IHQ score ( $r = 0.29$ ,  $p < 0.001$ ) and two IHQ subscales, Social Consequences ( $r = 0.34$ ,  $p < 0.001$ ) and Aggressive Urges ( $r = 0.34$ ,  $p < 0.001$ ). Empathy scores based on the Toronto Empathy Questionnaire (TEQ) weakly but significantly correlated with total IHQ scores ( $r = 0.19$ ,  $p = 0.02$ ). Empathy correlated with Social Dismissal ( $r = 0.237$ ,  $p < 0.001$ ) and Dehumanization ( $r = 0.20$ ,  $p = 0.02$ ).

The confirmatory factor analysis supports the four-factor structure of hate revealed by the exploratory factor analysis, comprising Social Dismissal, Aggressive Urges, Fear of Social Consequences, and Dehumanization. The model demonstrated excellent fit indices, suggesting that these factors adequately capture the multidimensional nature of hate.

The high internal consistency ( $\alpha = 0.93$ ) indicates strong reliability of the Interpersonal Hate Questionnaire (IHQ). The significant correlations between IHQ scores and measures of anger rumination, depression, anxiety, and obsessive-compulsive symptoms align with the hypothesis that hate is an intense negative emotional state that shares features with other forms of psychological distress and perseverative thinking patterns. The moderate correlation with anger rumination ( $r = 0.52$ ) is particularly noteworthy, which supports the conceptual link between hate and perseverative angry cognitions.

Interestingly, a weak but significant positive correlation was found between empathy and IHQ scores, particularly with the Social Dismissal and Dehumanization subscales. This counterintuitive result warrants further investigation and may reflect a complex relationship between empathic capacity and the experience of hate.

In our confirmatory factor analysis model, two of the four factors were represented by only two items, which deviates from the general recommendation of a minimum of three items per factor (Fabrigar et al., 1999; Costello & Osborne, 2005). This limitation potentially raises concerns about the stability and replicability of these factors. The overall model fit parameters were excellent, with a non-significant  $\chi^2$  test ( $\chi^2(38) = 35.3$ ,  $p = 0.594$ ), a low RMSEA of 0.0326, excellent CFI and TLI values of 1.00 and 1.01 respectively, and an SRMR below 0.01. These indicators suggest that the model demonstrates strong internal consistency and construct validity despite the limited number of items in two factors.

Under certain conditions, such as high factor loadings and theoretical solid grounding, two-item factors can be valid and reliable (Eisinga et al., 2013; Yong & Pearce, 2013). Although the model fit parameters provide empirical support for retaining these factors, using a new sample, we attempted to improve the IHQ by developing and testing additional items that capture their underlying constructs represented by the factors more comprehensively.

## Further refinement of the IHQ

To further refine the IHQ, we created additional items that were conceptually consistent with each factor so that ten items represented each factor. Additionally, items were revised for simplicity and to de-emphasize phrases such as “I felt” and “I feel” (e.g., “They are evil.” instead of “I feel they are evil”). We broadened our study sample by recruiting from three sources: Facebook, a mailing list of members of a lifelong learning community (i.e., adults at least 50 years old) associated with the university, and undergraduate volunteers. IHQ survey items were presented in random order. We collected data from August 22, 2024, through September 26, 2024. On average, the revised survey took 7.3 minutes (SD = 4.98 min).

## Participants

We recruited 586 people for this phase of the study. Three were under 18, 171 denied being able to think of anyone they hate, and 45 submitted incorrect answers to the attention check questions—The sample used for the analysis presented below comprised 360 people. The mean age of participants was 41.1 years (SD = 23.6; range 18–85). The sample included 299 females and 58 males; two individuals identified as nonbinary and one as gender-fluid. Regarding race, 343 were White, six preferred to self-describe, three were Black, 12 were Asian or Pacific Islander, 18 were Hispanic, and three were American Indian.

## Results and Discussion

We used an exploratory factor analysis (EFA) because the survey included a substantial number of new questions, some questions used for the prior samples were reworded for clarity and conciseness, and the study sample was more diverse than the previous samples. The EFA was conducted to investigate the underlying structure of the dataset using the minimum residuals extraction method. Initially, a Promax rotation was applied to allow for correlated factors. However, due to low inter-factor correlations, a Varimax rotation (orthogonal) was used in the final analysis to simplify interpretation.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.879, indicating excellent suitability for factor analysis. All individual items had KMO values above 0.77, confirming that each variable was appropriate for inclusion. Bartlett’s Test of Sphericity was significant,  $\chi^2(136) = 3174$ ,  $p < .001$ , confirming that the variables were sufficiently correlated to justify factor analysis. The reliability of the overall scale was assessed using Cronbach’s alpha, yielding a value of 0.830, indicating good internal consistency. Individual item statistics showed that removing any item

would not substantially improve the overall reliability, with all alphas remaining within a similar range if any single item were dropped.

Three of the four factors from the prior confirmatory factor analysis were extracted by the new EFA on this sample, accounting for 59.6% of the total variance. The model fit indices indicated a good fit to the data: RMSEA = 0.0556 (90% CI: 0.0441–0.0672), within the acceptable range for a well-fitting model; TLI = 0.952, indicating a good model fit;  $\chi^2(88) = 181$ ,  $p < .001$ : Though significant, this result is expected with larger sample sizes, and other fit indices confirm the adequacy of the model. The three extracted factors are orthogonal, with zero inter-factor correlations, confirming that Fear of Social Consequences, Dehumanization, and Aggressive Urges are distinct psychological constructs. Overall, this analysis confirmed the robustness of the revised IHQ and suggested that the items within each factor are reliable indicators of their respective constructs. A scree plot showing changes in eigenvalue as a function of factors is provided in the supplementary materials (Figure S4).

**Factor 1: Fear of Social Consequences:** This factor reflects concerns about social repercussions and potential harm to relationships resulting from expressing opposition or criticism of the hated person, accounting for 23.7% of the variance. Strongly loading items include (factor loadings in parentheses):

I fear social disapproval if I speak up against them. (0.84)

Confronting them will lead to my social isolation. (0.78)

Criticizing them will cause me to lose friends. (0.77)

Others will judge me negatively if I express my true feelings about them. (0.73)

I fear being excluded from social activities if I challenge their actions. (0.73)

My relationships will suffer if I speak out against them. (0.72)

**Factor 2: Dehumanization:** This factor captures the perception of others as morally devoid, inhumane, or lacking empathy, reflecting extreme moral disengagement and accounting for 21.5% of the variance. Strongly loading items were:

They are evil. (0.80)

They are completely inhumane. (0.79)

They lack the qualities that make someone human. (0.77)

They have no compassion or empathy. (0.76)

They are a monster because of their behavior. (0.75)

They are incapable of feeling emotions like a normal person. (0.72)

*Factor 3: Aggressive Urges:* This factor reflects impulses toward hostility and verbal aggression, accounting for 14.4% of the variance. Strongly loading items include:

I want to lash out at them. (0.86)

I want to curse them. (0.79)

I want to yell at them. (0.76)

I want to verbally insult them. (0.65)

The final factor solution provides a reliable and well-fitting model, offering insight into the distinct roles of social fears, Dehumanization, and aggressive impulses in interpersonal dynamics. This structure forms a robust foundation for further research.

Social dismissal is the only factor from the model produced by CFA on the previous sample that did not emerge in this EFA on a new sample. Social dismissal included items such as "I avoid them," "They are toxic," "I have no respect for them," and "They are mean." Items associated with social dismissal had uniformly weak loadings in the present sample.

## General Discussion

The present research advances our understanding of interpersonal hate by developing and validating a psychometric instrument that captures its key psychological dimensions. Given the substantial modifications to the instrument and the broader demographic composition of our final sample, we opted to conduct exploratory rather than confirmatory factor analysis for our final validation. This methodological decision allowed us to examine whether the factor structure would emerge organically in a more diverse population rather than imposing the previously identified structure on the data. The analysis yielded three robust factors underlying the experience of interpersonal hate: *Fear of Social Consequences*, *Dehumanization*, and *Aggressive Urges*. Notably, these three factors were consistent with those identified in our earlier exploratory and confirmatory factor analyses with student samples, providing strong evidence for their reliability and stability across different populations and variations in item content. The emergence of these three factors across different samples, analysis methods, and instrument versions substantially increases our confidence in these dimensions as fundamental components of interpersonal hate.

Our findings both support and challenge existing theoretical frameworks of hate. The emergence of Aggressive Urges as a distinct factor aligns with Allport's (1954) and Ekman's (1992a, 1992b) conceptualization of hate as arising from visceral responses to perceived threats. However, our results suggest that such aggressive impulses represent only one component of hate rather than

its core nature. The Dehumanization factor identified in our study resonates with Sternberg's (2003) triangular theory of hate, particularly his emphasis on the negation of intimacy. However, while Sternberg and Sternberg (2008) conceptualized hate as the antithesis of love, our findings suggest a more complex structure where Dehumanization operates independently of other hate dimensions.

The independence of our three factors provides an essential refinement to Martínez et al.'s (2022) recent work on differentiating hate from related emotions. While their research highlighted hate's distinct characteristics in terms of psychological arousal and threat perception, our findings suggest that these elements may manifest differently across individuals through separate psychological mechanisms. The Fear of Social Consequences factor, in particular, adds a novel dimension not extensively explored in previous theoretical frameworks, suggesting that social constraints play a crucial role in how interpersonal hate is experienced and expressed.

Our results also contribute to the ongoing discussion about interpersonal and intergroup hate distinctions. The avoidance-oriented nature of interpersonal hate described by Aumer and Bahn (2016) and Halperin et al. (2011) is reflected in our Fear of Social Consequences factor, suggesting that concerns about social repercussions may be a key driver of avoidance behaviors. Avoidance contrasts with the attack-oriented behaviors typically associated with intergroup hate (Mackie, Devos, & Smith, 2000), highlighting a fundamental difference in how these two forms of hate manifest behaviorally.

The correlation patterns between hate and other psychological variables provide new insights into how hate relates to broader emotional and cognitive processes. The moderate correlation between hate and anger rumination ( $r = 0.52$ ) aligns with Baumeister and Bushman's (2002) emphasis on the role of enduring anger in interpersonal hate, suggesting that rumination may serve as a mechanism for maintaining and reinforcing hate-related cognitions. The relationships between hate and anxiety ( $r = 0.45$ ), depression ( $r = 0.27$ ), and obsessive-compulsive symptoms ( $r = 0.29$ ) extend our understanding beyond the emotional spectrum initially outlined by Sternberg and Sternberg (2008), suggesting that hate may be embedded in broader patterns of psychological functioning.

The weak but significant positive correlation between empathy and hate scores presents an intriguing paradox that challenges traditional assumptions about the relationship between these constructs. This finding might be understood through Fischer et al.'s (2018) work on emotional complexity, suggesting that increased emotional sensitivity might enhance positive and negative emotional experiences in interpersonal contexts.

## Emotion Regulation Challenges and Potential Interventions

Interpersonal hate poses emotion regulation challenges due to its intense and enduring nature. Additionally, given the multidimensional nature of interpersonal hate, approaches that target specific aspects of hate may be required to help people regulate experiences of hate most effectively. Gross's Process Model may provide a framework to conceptualize how hate's dimensions might be targeted regulation at different stages. Gross et al.'s model identifies five strategies that occur at different points during the emotion-generative process: situation selection, situation modification, attentional deployment, cognitive change, and response modulation (Emotion Regulation: Conceptual Foundations, by J. J. Gross and R. A. Thompson, 2007, in J. J. Gross (Ed.), Handbook of Emotion Regulation, p. 10, Guilford Press. Copyright 2007 by Guilford Press.)

The first four strategies are antecedent-focused, occurring before or during the emotion experience, while response modulation is response-focused, taking place after the emotion has fully developed. This model suggests that individuals can influence what emotions they have, when they have them, and how they experience and express them. The strategies can be aimed at reducing, strengthening, or maintaining emotions depending on an individual's current needs or goals. In the case of interpersonal hate, for instance, situation selection may help mitigate Fear of Social Consequences by avoiding triggers that evoke relational anxieties.

Fear of Social Consequences aligns with cognitive processes requiring strategies like cognitive reappraisal, which has effectively reduced emotional distress by reinterpreting adverse situations (Scafuto et al., 2024; Zhou et al., 2023). Conversely, Aggressive Urges often involve automatic, visceral reactions and increased physiological arousal (Lu et al., 2023). Interventions like mindfulness-based therapies are promising tools for managing interpersonal hate by targeting specific dimensions. For Aggressive Urges, these therapies can reduce physiological arousal, promoting regulation through improved emotional awareness and control (Scafuto et al., 2024). Furthermore, mindfulness fosters cognitive flexibility, which is crucial for reappraising negative narratives that fuel Dehumanization, ultimately facilitating prosocial responses (Zhou et al., 2023).

### Constraints on Generality

Several limitations should be noted. While our initial sample consisted primarily of undergraduate students, our subsequent validation with a more diverse sample (age range 18–85) strengthens the generalizability of our findings. However, the sample remained predominantly white and female, potentially limiting the instrument's applicability across different demographic groups. Additionally, the cross-sectional nature of our data provides no information about the temporal stability of hate and its relationship with other psychological variables.

Future research should examine how these dimensions of hate manifest across different cultural contexts and demographic groups. Following Royzman et al.'s (2005) emphasis on the sociocultural aspects of hate, studies should investigate how cultural norms and values influence the expression and experience of each dimension. Longitudinal studies could help elucidate how hate develops and changes over time and whether certain dimensions predict specific behavioral outcomes. Investigation of potential protective factors against the development of harmful manifestations of hate could inform interventions to reduce interpersonal conflict and promote healthier social relationships.

## Conclusion

These findings have important implications for both research and practice. Identifying distinct dimensions of hate suggests that interventions might need to target specific components rather than treating hate as a unitary construct. For instance, individuals who experience intense feelings of hate and struggle with aggressive urges might benefit from anger management techniques. In contrast, those experiencing harm to social relationships might require interventions focused on social anxiety. Understanding the independence of these dimensions could help clinicians better assess and address hate-related issues in therapeutic contexts.

In conclusion, this research provides empirical support for conceptualizing interpersonal hate as a multidimensional construct comprised of three independent factors. The development of the Interpersonal Hate Questionnaire (IHQ) offers researchers and clinicians a valid and reliable tool for measuring these dimensions, opening new avenues for research into the nature, development, and potential intervention strategies for managing interpersonal hate. Our findings both build upon and extend previous theoretical frameworks, suggesting that interpersonal hate is more complex and nuanced than previously conceptualized, with distinct psychological components that operate independently rather than as a unified emotional response.

### ***Supporting Information***

Supporting information files can be accessed here: <https://osf.io/qk9zu>.

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2. Lu et al. (2023)

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## **Declarations**

### **Ethics**

Approval was waived by the University of North Carolina, Wilmington IRB.

### **Competing Interests**

The authors declare that no conflicts of interest exist.

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### **Author Contributions**

Rapgay - Conceptualization, Methodology, Writing -- reviewing & editing; Conchar - Investigation, validation, writing--review & editing; Keith - Conceptualization, data curation, formal analysis, investigation, methodology, project administration, supervision, visualization, writing--original draft, reviewing, editing.