

# *The Mental Health Symptomology Affect Moral Acceptance: The Mediation Effect of Deontological Tendency*

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**Abstract:** This research investigated how mental health symptomology predict moral acceptance and determined the mediation effect of deontological tendency. The current research used self-report questionnaires to collect data from 2248 college students. We assessed their mental health symptomology and seven moral dilemmas adapted to Chinese culture to measure individuals' moral acceptance. Also, we employed the process-dissociation task to measure the moral motivations of utilitarian and deontological tendencies, including seven incongruent and seven congruent moral dilemmas. Mediation analysis results indicate that the score in deontological tendency plays a mediating role between the specific mental health symptomologies (somatization, interpersonal sensitivity, depression, anxiety, hostile, paranoid) and moral acceptance. Individuals with lower mental health level were more likely to make more acceptance, while deontological tendency mediated the relationship between the path. When experiencing symptoms such as somatization, interpersonal sensitivity, depression, anxiety, hostility, or paranoia, individuals are more likely to rely less on deontological tendencies and exhibit more utilitarian behavior during the pandemic.

## 1. Introduction

Moral judgment, as an indispensable cornerstone of human society, is of paramount importance. It serves as an internal compass guiding individual behavioral choices and is a crucial force in fostering harmonious social order and advancing civilization<sup>[1]</sup>. Drawing upon the Dual-Process Theory<sup>[2]</sup>, mental health symptoms can potentially influence the moral judgments of college students. This theory posits that moral decision-making involves both automatic, intuitive processes and controlled, deliberate processes. Mental health symptoms, such as anxiety, depression, may disrupt the balance between these two systems, potentially skewing moral judgments towards more impulsive or less rational outcomes. For instance, heightened emotional states could amplify the influence of emotional heuristics, leading students to rely more heavily on gut feelings or

immediate emotional responses when making moral evaluations. Conversely, cognitive impairments associated with certain mental state may hinder the ability to engage in nuanced, reason-based moral reasoning<sup>[3]</sup>. Therefore, recognizing and addressing mental health symptoms among college students is crucial for fostering healthy and well-informed moral judgment capabilities.

Individuals' morality has been classified into two categories: utilitarianism and virtue ethics. Furthermore, researchers have successfully associated these judgment types with both controlled and automatic cognitive processes. Nonetheless, these valuable insights fail to consider the diverse array of underlying motives that can influence individuals' moral judgments. Researchers designed a process-dissociation approach to analyze moral motivations between different cognitive processes involved in making moral judgments in moral dilemmas<sup>[4]</sup>. In this framework, researchers concluded that two psychological processes are involved in making moral judgments: consequences (utilitarian tendency) and norms (deontological tendency). They represent potential thinking processes for two hypotheses: utilitarianism and virtue ethics. In moral judgment, researchers used the process-dissociation approach (PDA) to assess the relative strength of participants' moral and utilitarian judgments in incongruent and congruent dilemma situations. To meet the requirements of the process-dissociation paradigm, incongruent dilemmas in experimental materials were aimed at moral dilemmas with strong emotional conflicts. In contrast, congruent dilemmas refer to non-dilemma moral issues without obvious emotional conflicts<sup>[4]</sup>. This may weaken the emotional experience in congruent dilemmas, leading participants to make utilitarian judgments (driven by cognitive processing) in different situations. In incongruent dilemmas, individuals who apply the principle of utilitarianism point out harmful behavior, while those who apply the principle of virtue ethics refuse destructive behavior<sup>[5]</sup>. In congruent dilemmas, individuals based on virtue ethics or utilitarianism principles are consistent with considering harmful behavior. By comparing choices in congruent and incongruent moral dilemmas, researchers can calculate the relative strength of each participant's deontological and utilitarian tendencies.

However, previous researches did not determine the deontological and utilitarian tendencies separately in the relationship between moral dilemmas and mental health symptoms. Therefore, whether the emotional defect of mental health would affect individuals' moral judgment by influencing the two processing systems or either one of them cannot be determined. In the current study, researchers examined the mediation effect of utilitarian tendency and deontological tendency in how mental health impacts on moral judgment.

## 2. Methods

### 2.1. Participants and Procedure

During the period spanning from March 15th to April 15th, 2024, 2500 college students between the ages of 18 and 22 participated in the present study. Before the survey, all participants willingly provided written informed consent and volunteered to take part in the research. Each participant was assured that their personal data would be kept anonymous and used exclusively for research purposes. Ultimately, 2350 college students submitted their questionnaires, while 102 were excluded due to identical consecutive responses or a specific answer pattern. The final sample comprised 2248 college students (957 male, 1291 female), primarily freshmen with an average age of  $19.179 \pm 0.776$ .

## 2.2. Measurements

### 2.2.1. Mental health measurement

The Symptom Check-List 90 (SCL-90) SCL-90 is usually used to assess mental health. It comprises 90 items and 10 subscales to assess somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. SCL-90 has all been previously validated and used in Chinese populations. Therefore, they were appropriate for use in this study.

### 2.2.2. Measurements of Utilitarian and Deontological Tendency

We employed the process-dissociation task to measure the moral motivations of utilitarian and deontological tendencies, including seven incongruent and seven congruent moral dilemmas. The incongruent dilemmas between cognitive conflicts and emotional ones made conflict judgments of dilemmas in moral decisions. The congruent dilemmas were matched with the incongruent dilemmas, which modified the incongruent dilemmas to minimize the moral conflict. Seven dilemmas, comprising the congruent and incongruent versions, are designed to measure participants' utilitarian and deontological principles<sup>[6]</sup>. For instance, in the car accident of congruent dilemma, participants were instructed to judge whether turning and hurting the schoolchildren to avoid hitting a young mother and her child is acceptable. In this scenario, individuals with utilitarian and deontological principles are inclined to refuse to hurt the children. Correspondingly, the calculation method follows the process-dissociation task requirement.

### 2.2.3. Moral Acceptance Measurement

The moral acceptance utilized an updated set of original dilemmas. These dilemmas were adapted to Chinese culture, which selected seven moral dilemmas for the current study<sup>[5],[6]</sup>. The psychometric properties of these dilemmas were deemed appropriate for college students. All dilemmas were presented in the first-person form. Participants were asked to rate the moral acceptability of specific actions and outcomes (e.g., how morally acceptable is it for you to kill one person to save the five persons by pulling the switch to stop the uncontrollable trolley) on a 7-point Likert scale (1=not at all, 7=very much), with higher scores representing greater moral acceptance.

## 3. Result

To further examine the mediate effect of deontological tendencies, the study used the SPSS 24.0 software 3.5 process<sup>[7]</sup>. The bootstrap procedure with 5000 resamples is adopted to explore the significance levels of indirect effects. The data show that the regression analysis of mental health symptomology and deontological tendency on moral acceptance is significant ( $R^2 = .189$ ,  $F = 262.157$ ,  $p < .001$ ). But the indirect effect of mental health on moral acceptance via deontological tendency is not significant,  $\beta = -1.820$ ,  $SE = .082$ , Bootstrap 95%  $CI = [.000, .001]$ . Further, we analyze whether deontological tendency mediated the relationships between the sub-factors of SCL-90 and moral acceptance. Mediation analysis results indicate that the score in deontological tendency plays a mediating role between the specific mental health symptomologies (somatization, interpersonal sensitivity, depression, anxiety, hostile, paranoid) and moral acceptance. The more data information can be seen in table 1.

Table 1: Standardized direct and indirect association coefficients of the model

Model	Effect	SE	t	Bootstrap 95% CI	
				LLCI	ULCI
(a). Somatization — Deontological tendency — Moral acceptance					
Total Effect	.237	.050	4.743***	.139	.335
Direct Effect	.191	.045	4.202***	.102	.280
Indirect Effect	.047	.021		.006	.089
Indirect Effect/ Total Effect	19.831%(.047/.237)				
(b). Interpersonal sensitivity — Deontological tendency — Moral acceptance					
Total Effect	.202	.038	5.283***	.127	.278
Direct Effect	.161	.035	4.631***	.093	.229
Indirect Effect	.041	.016		.012	.073
Indirect Effect/ Total Effect	20.297%(.041/.202)				
(c). Depression — Deontological tendency — Moral acceptance					
Total Effect	.187	.038	4.878***	.112	.262
Direct Effect	.150	.035	4.309***	.082	.218
Indirect Effect	.037	.016		.008	.070
Indirect Effect/ Total Effect	19.786%(.037/.187)				
(d). Anxiety — Deontological tendency — Moral acceptance					
Total Effect	.200	.042	4.723***	.117	.283
Direct Effect	.153	.038	3.993***	.078	.229
Indirect Effect	.046	.017		.014	.082
Indirect Effect/ Total Effect	23.000%(.046/.200)				
(e). Hostile — Deontological tendency — Moral acceptance					
Total Effect	.189	.044	4.299***	.103	.276
Direct Effect	.145	.040	3.616***	.066	.223
Indirect Effect	.045	.018		.014	.082
Indirect Effect/ Total Effect	23.810%(.045/.189)				
(f). Paranoid — Deontological tendency — Moral acceptance					
Total Effect	.240	.046	5.245***	.151	.330
Direct Effect	.179	.042	4.303***	.098	.261
Indirect Effect	.061	.019		.025	.101
Indirect Effect/ Total Effect	25.417%(.061/.240)				

Note: \*significant at  $p < .05$ . \*\*significant at  $p < .01$ . \*\*\*significant at  $p < .001$ .

#### 4. Conclusions

In the present study, the process dissociation paradigm is employed to investigate the impact of mental health and its interplay with deontological tendency on moral acceptance in moral dilemmas. The current study investigated the impact of mental health symptomology and its mediate role of deontological tendency on moral judgments in moral dilemmas. The data indicate that the worsened mental health tends to make more moral acceptance judgments, while the deontological tendency mediated the connection between mental health and moral judgments. However, the utilitarian tendency cannot mediate in mental health predicting moral acceptance. The reason why the worse mental health increased moral acceptance is revealed.

This study suggested that compromised mental health may shift an individuals' moral decision-making preferences towards making more moral acceptance that emphasize the greatest well-being

for the majority, as opposed to deontological choices which prioritize adherence to moral principles regardless of the consequence. This shift in moral decision-making towards utilitarianism (making more moral acceptance) might indicate a higher demand on cognitive reasoning and a decreased influence of emotional reactions in individuals experiencing mental health challenges<sup>[8],[9]</sup>. Up to date, previous researches do not assess the deontological and utilitarian tendencies separately. Therefore, whether the individuals' mental health impact their moral acceptance by affecting the two processing systems or either one of them cannot be determined. The current study effectively fills this gap by employing the process dissociation approach (PDA)<sup>[4]</sup>. Mediation analysis results indicate that the score in deontological tendency plays a mediating role between mental health sub factors (somatization, interpersonal sensitivity, depression, anxiety, hostile, paranoid) and moral acceptance. Additionally, it appears that utilitarian tendency does not play a significant mediating role in all the path. Also, there is the first time to explore the relationship between somatization, interpersonal sensitivity, depression, anxiety, hostile, and paranoid problems and moral judgment, and firstly to examine the hypothesized model of how somatization, interpersonal sensitivity, depression, anxiety, hostile, and paranoid problems indicators influence moral judgment via by deontological tendency. Although previous evidence found the association with mental health sub factors and morality (e.g. anxiety and moral judgment)<sup>[10],[11]</sup>, they fail to examine the underlying psychological mechanisms. Our results effectively fill these gaps and established the mediation model of how mental health symptomology influence moral judgment via by deontological tendency. The results indicate that emotional deficiencies in mental health can affect an individual's emotional processing system when they making moral decision<sup>[5],[6]</sup>.

These findings are consistent with a similar pattern observed in previous literature among college students, suggesting that the mechanisms linking mental health to moral acceptance are preserved in emotional deficiencies.

## References

- [1] Malle, B. F. *Moral Judgments*. *Annu. Rev. Psychol.* 72, 293–318 (2021).
- [2] Buon, M., Seara-Cardoso, A. & Viding, E. Why (and how) should we study the interplay between emotional arousal, Theory of Mind, and inhibitory control to understand moral cognition? *Psychon. Bull. Rev.* 23, 1660–1680 (2016).
- [3] Shin, Y. et al. The effect of deliberative process on the self-sacrificial decisions of utilitarian healthcare students. *BMC Med. Ethics* 23, 1–11 (2022).
- [4] Conway, P. & Gawronski, B. Deontological and utilitarian inclinations in moral decision making: A process dissociation approach. *J. Pers. Soc. Psychol.* 104, 216–235 (2013).
- [5] Yin, X., Hong, Z., Zheng, Y. & Ni, Y. Effect of subclinical depression on moral judgment dilemmas: a process dissociation approach. *Sci. Rep.* 12, 1–8 (2022).
- [6] Li, S. et al. The characteristics of moral judgment of psychopaths: The mediating effect of the deontological tendency. *Psychol. Res. Behav. Manag.* 13, 257–266 (2020).
- [7] Hayes, A. F. & Preacher, K. J. Statistical mediation analysis with a multicategorical independent variable. *Br. J. Math. Stat. Psychol.* 67, 451–470 (2014).
- [8] Park, J., Shin, Y., Kim, S., Maeng, S. & Ihm, J. Effects of perspective switching and utilitarian thinking on moral judgments in a sacrificial dilemma among healthcare and non-healthcare students. *Curr. Psychol.* (2023).
- [9] Greene, J. D. The rise of moral cognition. *Cognition* 135, 39–42 (2015).
- [10] Zhao, J., Harris, M. & Vigo, R. Anxiety and moral judgment: The shared deontological tendency of the behavioral inhibition system and the unique utilitarian tendency of trait anxiety. *Pers. Individ. Dif.* 95, 29–33 (2016).
- [11] Patil, I., Larsen, E. M., Kichic, R. & Gleichgerricht, E. Moral Cognition about Harm in Anxiety Disorders: The Importance of Experienced Emotion. *Psychol. Rep.* 124, 2501–2523 (2021).