University of Groningen

Moral reasoning explained by personality traits and moral disengagement

Kuilman, Luppó; Jansen, Gradus; Middel, Berry; Mulder, Laetitia; Roodbol, Pieterella

Published in:
Journal of Advanced Nursing

DOI:
[10.1111/jan.13939](https://doi.org/10.1111/jan.13939)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2019

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Kuilman, L., Jansen, G., Middel, B., Mulder, L., & Roodbol, P. (2019). Moral reasoning explained by personality traits and moral disengagement: A study among Dutch nurse practitioners and physician assistants. *Journal of Advanced Nursing*, 75(6), 1252-1262. <https://doi.org/10.1111/jan.13939>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

ORIGINAL RESEARCH:
EMPIRICAL RESEARCH – QUANTITATIVE

Moral reasoning explained by personality traits and moral disengagement: A study among Dutch nurse practitioners and physician assistants

Luppo Kuilman^{1,2} | Gerard J. Jansen¹ | Berrie Middel³ | Laetitia B. Mulder⁴ |
Petrie F. Roodbol¹

¹Health Science - Nursing Research, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands

²Department of Physician Assistant Studies, College of Health and Human Service, Northern Arizona University, Phoenix, Arizona

³Department of Health Sciences, Division of Community & Occupational Medicine, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands

⁴Faculty of Economics and Business, Human Resource Management & Organisational Behaviour, University of Groningen, Groningen, The Netherlands

Correspondence

Luppo Kuilman, University of Groningen, University Medical Center Groningen, Health Science - Nursing Research, Groningen, The Netherlands
Emails: l.kuilman@pl.hanze.nl; luppo.kuilman@nau.edu

Funding information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Abstract

Aim: To explore the direct and indirect effect of the personality meta-traits 'Stability' and 'Plasticity' on moral reasoning among nurse practitioners (NPs) and physician assistants (PAs).

Background: Moral reasoning is influenced by being prone to moral disengagement and personality traits. Moral disengagement is observed among professionals in many fields, including healthcare providers. Moral disengagement is known to be provoked by environmental stressors and influenced by certain personality traits.

Design: A cross-sectional approach was used including self-report questionnaires.

Methods: A convenience sample of Dutch NPs ($N = 67$) and PAs ($N = 88$) was surveyed via online questionnaires between January and March 2015, using (a) the Defining Issues Test; (b) the BIG five inventory; and (c) the Moral Disengagement Scale. Structural equation modelling (SEM) was employed for estimating the construct validity of two meta-traits of personality and to test unidirectional influences on moral reasoning.

Results: Only the Stability trait was a direct predictor of moral reasoning whereas both Stability and Plasticity were precursors of moral disengagement. Both personality meta-traits had statistically significant indirect effects on moral reasoning through a low level of moral disengagement. The influence of both personality traits on the level of moral reasoning was increased by strong self-censure on entering into morally disengaged interactions.

Conclusion: The personality meta-trait 'Stability' is an indicator of moral reasoning and is explained by a lower propensity to morally disengage among highly stable people. Although the meta-trait Plasticity exerts an indirect effect through moral disengagement on moral reasoning, it is not a direct indicator of moral reasoning.

KEYWORDS

moral disengagement, moral reasoning, moral self-control, nurse practitioners, nursing, personality meta-traits, physician assistants

1 | INTRODUCTION

Two decades ago, a medical workforce shortage in the Netherlands was predicted. To overcome the imbalance between the demand and supply of medical care, new professions such as nurse practitioners (NPs) and physician assistants (PAs) were introduced. In the Netherlands, both NPs and PAs are trained at a Master's degree level and are employed in all medical specialties, including general practice (van den Driesschen & de Roo, 2014; van Vught, van den Brink, & Wobbles, 2014; Zwijnenberg & Bours, 2012). The NP and PA program lasted for 24 and 30 months respectively and enrolment requires an undergraduate degree in nursing or any paramedical science, besides having at least 2 years of clinical experience.

From a socio-economic viewpoint, the introduction of NPs and PAs to Dutch society appears to contribute to a satisfactory level of medical task shifting throughout the healthcare system (Laurant et al., 2008; Maten-Speksnijder, Grypdonck, Pool, Meurs, & Staa, 2014; Schuttelaar, Vermeulen, & Coenraads, 2011; Timmermans et al., 2016). Both NPs and PAs are entrusted and legally enabled to autonomous practice (Bruijn-Geraets, Daisy, Eijk-Hustings, Yvonne, & Vrijhoef, 2014).

Moreover, when viewing NPs and PAs as advanced practice providers, an important layer in the fundament of their professionalism, namely ethical understanding (Stern & Papadakis, 2006), remains underexposed in the literature to date. In their professional codes of conduct, both health professionals are obligated to ethical standards. To adhere to the professional profile and codes of conduct NP and PA students are trained in presenting moral dilemmas experienced in their own daily medical life to explore the meaning of concepts such as recognizing ethical implications, reflection on central concepts of professionalism in ethical decision-making and moral consultancy. In discussing personally experienced ethical dilemmas, the generic principles of no harm, autonomy, non-maleficence, beneficence, justice, truthfulness, and honesty and respect for human rights, if relevant, are employed to foster enhanced levels of moral reasoning.

Yet, the NP and PA literature is scarce concerning predictors of moral reasoning as a skill necessary for thorough decision-making in moral dilemmas. This gap in evidence – not only for Dutch NPs and PAs but globally – presents an opportunity to explore ethics as a basic requirement for all healthcare professionals. With continuous changing healthcare environments (e.g. working conditions, contextual stressors, the pressing need for cost containment), the assumption is that ethical conflicts are commonly experienced by all healthcare professionals, regardless of their specialization (Pauly, Varcoe, & Storch, 2012). Factors contributing to moral-conflict-laden situations include: (a) manpower problems; (b) effects of increasing efficiency demands; (c) disturbed increasing hierarchical power; and (d) increasing lack of control over one's own professional conduct (Burston & Tuckett, 2013; Sporrang, Höglund, & Arnetz, 2006). These factors may affect the patient–healthcare professional relationship and could lead to the onset of moral dilemmas in this relationship (De Haan, 2001).

Why is this research or review needed?

- As anywhere, also in the Netherlands, the health care system is a moral enterprise.
- Nurse practitioners and physician assistants are relatively new professions for the Netherlands.
- Since both health professionals are independent health-care providers there is a necessity to know whether these providers are competent in ethical understanding and reasoning.

What are the key findings?

- Principled levels of moral reasoning are strongly predicted by the personality-type Stability.
- The degree of moral disengagement mediates the relationship between the personality-type Stability and moral reasoning.

How should the findings be used to influence policy/practice/research/education?

- Clinical ethics courses should pay attention to the pivotal role of moral disengagement in relation to principled moral reasoning, for example by using for simulated patient encounters.
- Employers in any healthcare setting known to have a complex moral climate should assess personality structures of nurse practitioners and physician assistant applicants.

2 | BACKGROUND

With the Four Component Model of Moral Behaviour (FCM), coping with a moral dilemma is assumed as a multidimensional process where four factors simultaneously play a role in the decision-making process: (a) moral sensitivity; (b) moral reasoning; (c) moral motivation; and (d) moral character (Rest, Thoma, & Bebeau, 1999). Moral sensitivity means that an individual recognizes that a decision has moral aspects and that he/she can properly assess the interests and risks for a patient, the care provider, and society. Moral reasoning means that an individual can process information to make a judgment about what action is morally right. Moral motivation entails the importance an individual attaches to enhancing patient interest and the moral character reflects the degree of the individual's ego, strength, and implementation skills to ultimately follow his or her intentions.

In this study, we zoom in on the component of moral reasoning. Recognizing that individuals may differ in their level of moral reasoning, Kohlberg introduced moral reasoning as the manifestation of an inner-psychological and cognitive-developmental structure that governs action in situations where moral claims conflict (Kohlberg, 1969).

Theoretically, moral reasoning is divided into three stages: (a) pre-conventional stage, reflecting considerations characterized as personal interest (maximizing rewards, obeying authority figures, and conforming to perceived external norms and standards); (b) conventional stage, reflecting a perspective wider than self-interest where the importance of doing one's duty and emphasizing legal, religious, or societal precepts are more prevalent in decision-making; and (c) post-conventional (principled) stage of moral reasoning emerging from self-chosen ethical principles that are logical, comprehensive and consistent in the perceptions of those who must make ethical decisions. These stages of moral reasoning were operationalized in the Defining Issues Test (DIT-N2 index; Rest, Thoma, Narvaez, & Bebeau, 1997), which has become widely used.

In contrast to the FCM, Bandura stressed that there is much more involved in the process that regulates human conduct related to solving moral dilemmas (Bandura, 1999). Bandura's social cognitive theory (Bandura, 1986) suggests that moral reasoning may lead to action, but that it is only possible through self-regulation rooted in one's own moral standard. He proposed that moral self-control can be selectively activated or disengaged (Bandura, 1990). Bandura sees this self-influence as a continuous process that motivates and regulates moral conduct.

However, in later work Bandura introduced the concept of moral disengagement or detachment from moral self-control (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). In the conceptual framework of moral disengagement, he proposed that eight mechanisms play a role in the self-regulatory process of detrimental conduct: moral justification, euphemistic labelling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame and dehumanization. People use these mechanisms to justify behaviour that does not comply with their own standard of moral values and beliefs and thus avoid self-sanction (Bandura et al., 1996). As such, moral disengagement is a manifestation of a lack of moral self-regulation.

2.1 | Moral reasoning and mechanisms of moral disengagement

Carroll (Carroll, 2009) reported that moral disengagement negatively correlated ($r = -0.34$, $p < 0.01$) with moral reasoning (estimated with the N2 score). This means that people who have a stronger control or self-censure over the tendency to morally disengage exhibit a higher level of moral reasoning. Dineen (2012) explored moral disengagement of medical providers as a contributing factor to ethical decision-making. She found that the reality of clinical practice, which abounds with morally distressing factors, often perpetuates inadequate treatment which occurs through progressive disengagement of self-censure (Dineen, 2012).

2.2 | Moral disengagement and personality

In addition to moral reasoning, personality also correlates with moral disengagement. In research among nurses about bypassing moral and ethical codes, Fida and colleagues (2016) showed that a higher

propensity to morally disengage was associated ($R = -0.15^*$) with lower degrees of the Big Five personality trait conscientiousness (Fida et al., 2016). Theoretically, the association between moral disengagement and conscientiousness is plausible because conscientiousness is the propensity to follow socially prescribed norms for impulse control, to be goal-directed, to plan, and to be able to delay gratification (Roberts, Jackson, Fayard, Edmonds, & Meints, 2009). This means that people who comply with this definition of conscientiousness are not expected to morally disengage. Costa and McCrae stated that conscientious people tend to think carefully prior to acting and adhere to their moral obligations and perceived responsibilities (Costa & McCrae, 1992). Furthermore, several studies that start from the standpoint of viewing moral disengagement as the counterpart to ethical behaviour have found positive relationships between ethical behaviour and the personality traits agreeableness, conscientiousness, and emotional stability (reverse of neuroticism; Brown & Treviño, 2006; Walumbwa & Schaubroeck, 2009).

2.3 | Moral reasoning and personality traits

The personality traits associated with mechanisms of moral disengagement (e.g. openness, agreeableness, neuroticism, or conscientiousness) also correlate with moral reasoning. If, as Chovan suggests, moral reasoning is the process of how people think (denoted as a thinking style) once they are faced with moral dilemmas (Chovan, 2007), then the relationship between personality and moral reasoning is plausible. Especially so, because Li-fang Zhang found significant relationships between thinking styles and personality traits (Zhang, 2006). However, in considering moral reasoning to be a cognitive process, Mudrack concluded that a direct relationship with personality would not be reasonable (Mudrack, 2006). In doing so, he referred to Rest and colleagues: 'Of approximately 150 correlations between the DIT and personality measures, most are non-significant' (Rest, Thoma, et al., 1999) (p. 108).

Nevertheless, in another study some statistically significant zero-order correlations ($p < 0.001$) with an explained variance of 9% between moral reasoning (DIT) and the personality traits openness and conscientiousness were found (Dollinger & LaMartina, 1998). This finding was confirmed in the study among students. Furthermore, Derryberry and colleagues observed a statistically significant, positive correlation ($R = 0.18^*$) between openness and post-conventional moral reasoning (Derryberry, Wilson, Snyder, Norman, & Barger, 2005). Another study assessing the relationship between the Big Five personality traits and moral reasoning (Athota, Oconnor, & Jackson, 2009) found statistically significant correlations between an indicator of moral reasoning (assessed with the Mach IV) and the personality traits extraversion ($R = 0.28^{**}$), agreeableness ($R = 0.23^{**}$), emotional stability ($R = 0.21^*$), and openness ($R = 0.41^{**}$).

Overall, the above literature does not paint a consistent picture of the direct relationship between the Big Five personality traits and moral reasoning. Openness seems to most consistently have positive relationships with moral reasoning, but this trait is not directly conceptually one that would be considered characteristic of a moral

person. The other traits (i.e. conscientiousness, agreeableness, emotional stability (reverse of neuroticism) and extraversion) do not always consistently correlate with moral reasoning. We, therefore, conclude that the outcomes are neither consistent nor reproducible across varying study populations.

2.4 | Higher-order meta-traits of personality

One reason for the inconsistent results could be the systematically known autocorrelations between these personality traits (Costa & McCrae, 1992), which hamper the study of the independent effect of the Big Five traits. To address the issue of autocorrelation, researchers measure personality at a higher aggregation level. First, Digman transformed the Big Five components into two higher-order meta-traits of personality, denoted as α and β (Digman, 1997). The α factor comprises the following Big Five personality traits: conscientiousness, agreeableness, and emotional stability (reverse of neuroticism); the β factor comprises the traits extraversion and openness.

These two higher-order components were tested by DeYoung, Peterson, and Higgins with the α factor labelled 'Stability' and the β factor 'Plasticity' (DeYoung, Peterson, & Higgins, 2002). They were then confirmed by Van der Linden, Te Nijenhuis and Bakker in a meta-analysis across several studies (Van der Linden, te Nijenhuis, & Bakker, 2010). The meta-trait Stability reflects the extent to which an individual is consistent in motivation and avoids social interactions and disruptions in mood, while Plasticity reflects the extent to which a person actively searches for new and rewarding experiences, or explores and engages flexibly with novelty, both intellectual and social (DeYoung, 2006; Van der Linden et al., 2010). Stability aligns with the idea that certain personality traits (i.e. agreeableness, conscientiousness, emotional stability) may be considered indicators of moral personality

(Brown & Treviño, 2006; Kalshoven, Den Hartog, & De Hoogh, 2011; Walumbwa & Schaubroeck, 2009). Especially so, because the shared variance of agreeableness, conscientiousness, and emotional stability reflects characteristics such as trust, straightforwardness, altruism, self-discipline, orderliness and achievement-striving; all characteristics one may expect from moral people (DeYoung et al., 2002).

3 | THE STUDY

3.1 | Aims

This study has two aims: (a) to examine whether there are relationships between moral reasoning and the personality meta-traits Stability and Plasticity; and (b) to assess whether the propensity to morally disengage explains these relationships. The practical relevance of testing the measurement model (Figure 1) in this study lies in the fact that moral reasoning is not a singular event in the ethical decision-making process. If indeed personality traits and mechanisms of moral disengagement are, respectively, influencing and intervening variables, this might have implications for the selection and training of healthcare professionals.

3.2 | Study design and participants

A cross-sectional approach was used including self-report questionnaires. We recruited 155 NPs and PAs from five PA programs and one NP program in the Netherlands.

3.3 | Procedure

The program administrators of these six programs sent their alumni an information letter about this study. By activating a hyperlink to a

FIGURE 1 Path model of personality traits as direct predictors of extent of moral disengagement, moral reasoning and indirect predictors of moral reasoning (mediated by extent of moral disengagement) in nurse practitioners and physician assistants. Depicted coefficients are statistically significant at $p = 0.01$ level, $N = 155$, $\chi^2 = 5.79$, $df = 6$, $p = 0.51$; CFI = 1.00, TLI = 1.00; RMSEA = 0.003 (RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker–Lewis Index)

web-based system in this letter, each respondent could: (a) indicate that he or she was informed about the aim and method of the study; and (b) agree to the use of their e-mail address. Agreeing to participate was considered informed consent. Then, they each received the access key to the web-based set of questionnaires.

A total of 294 subjects were willing to participate: 176 PAs and 118 NPs. Data collection was between January and March 2015. By the closure of the online survey, 88 PAs and 67 NPs had completed all the questionnaires. Since no data were received from the remaining 139 respondents, we acquired no information from them that could be used to test for selection bias.

3.4 | Ethical considerations

According to the statement by the Central Committee on Research Involving Human Subjects (www.ccmo.nl), no internal review board approval was warranted for this type of survey study among volunteer professionals. An information letter sent to all respondents informed them about: (a) the purpose of the study; (b) the fact that participation was voluntary; and (c) that they could end their participation in the study at any time. Respondents were also informed that their answers were completely anonymous and would not be used for any purpose other than the study. Furthermore, the letter clearly addressed the expected average completion time (45 min) for filling out the questionnaires.

This study was performed in accordance with the tenets of the Declaration of Helsinki (General Assembly of the World Medical Association, 2014). Only the first author (LK) had access to the encrypted data. The questionnaires were filled out using Qualtrics software (version January–December 2016). All questions were forced-choice, which produced no information bias due to missing values in scale construction and statistical analysis.

3.5 | Data analysis

Prior to analysis, all continuous variables (except the standardized N2-index) were transformed into approximately normal distributed indicators by the two-step transformation process (Templeton & Burney, 2016).

3.5.1 | Bivariate analysis

For categorical data, we used the chi-squared test (Fisher's exact tests for 2×2 contingency tables) and the difference between proportions test (Newcombe & Altman, 2000). For continuous variables, we used student *t* test for independent samples.

3.5.2 | Multivariate analysis

Structural equation modelling (SEM) only allows testing of unidirectional effects among multiple continuous dependent and independent variables. Therefore, SEM was more appropriate for our study than standard multiple regression techniques because it allows simultaneous assessment of the strength and direction of the interrelationships.

To test the theoretical model against the observed data, we applied SEM. The structural model concerned the direct and indirect effects of Stability and Plasticity on moral reasoning. Both the direct and indirect effects (through moral disengagement) were estimated in a path analysis. As our sample size ($N = 155$) was rather small, we decided to perform a bootstrapped SEM by replicating the sample twice. As suggested by Bentler and Bonett, we used multiple criteria to judge the model fit (Bentler & Bonett, 1980). These criteria were: (a) non-significant chi-square, indicating that a non-significant proportion of variance in the data remains unexplained (Kline, 1998); (b) root mean square error of approximation (RMSEA) less than 0.06, indicating a good fit to the data (Browne & Cudeck, 1993); (c) comparative fit index (CFI) ≥ 0.97 , indicating good fit (Schermelleh-Engel, Moosbrugger, & Müller, 2003); and (d) Tucker–Lewis Index (TLI, also known as the non-normed fit index). Both CFI and RMSEA were used because it has been argued that they provide more stable and accurate estimates than several of the other fit indices (Hu & Bentler, 1999). Bivariate and statistical analyses were performed using SPSS 25 for Windows. All multivariate statistical analyses were executed using STATA 14.0.

3.6 | Measurements

3.6.1 | Sociodemographic characteristics

For comparability testing of the NP and PA samples, background characteristics were collected, namely: gender, age, religious beliefs, and political affiliation. Additionally, respondents were asked to typify their working environment as (a) 'working in a hospital'; (b) 'in general practice'; (c) 'in mental health care'; (d) 'in mentally disabled care'; or (e) 'other'.

3.7 | Validity, reliability, and rigour of the instruments

Three instruments were used as indicators for the constructs of interest: (a) the DIT, measuring the level of moral reasoning; (b) the Big Five Inventory (BFI), for measuring personality traits and constructing the meta-traits; and (c) the Moral Disengagement Scale, measuring the propensity to morally disengage. These three instruments were translated into Dutch according to the procedure proposed by Guillemin and colleagues (Guillemin, Bombardier, & Beaton, 1993). First, the original English versions of the questionnaires were translated into Dutch by two certified translators working independently. Second, two more certified translators each translated these Dutch translations back into English. The resulting English versions were compared with the originals and all discrepancies were discussed by three researchers who spoke both Dutch and English. The remaining discrepancies were discussed with a native English speaker from the University of Groningen Language Centre. For a detailed description of the instruments, see Supporting Information Appendix S1.

TABLE 1 Sociodemographic characteristics stratified by NPs and PAs

Sociodemographic characteristics	Nurse practitioner N = 67	Physician assistant N = 88	Total N = 155
Age mean (SD)	48.8 (8.7)	42.5 (8.4)	45.2 (9.1)
Gender			
Female N (%)	53 (79.1)	56 (63.6)	109 (70.3%)
Male N (%)	14 (20.9)	32 (36.4)	46 (29.7%)
Religion			
Not religious	35 (52.3)	48 (54.5)	83 (53.5%)
No denomination but spiritual	4 (4.5)	3 (3.4)	7 (4.5%)
Christian	25 (37.3)	35 (39.8)	60 (38.7%)
Islam	0	1 (1.1)	1 (0.7%)
Other religions	3 (4.5)	1	4 (2.6%)
Working environment			
Hospital N (%)	49 (73.1%)	64 (72.7%)	113 (72.9%)
General practice N (%)	7 (10.5%)	13 (14.8%)	20 (12.9%)
Mental health N (%)	6 (9%)	3 (3.4%)	9 (5.8%)
Disability care N (%)	1 (1.5%)	1 (1.1%)	2 (1.3%)
Else N (%)	4 (5.9%)	7 (8%)	11 (7.1%)
Political orientation			
Conservative N (%)	6 (9%)	15 (17%)	21 (13.5%)
Liberal N (%)	61 (91%)	73 (83%)	134 (86.5%)

4 | RESULTS

This study had a total response rate of 52.7% (i.e. 155/294 completed all the questionnaires). Table 1 shows an overview of the sociodemographic characteristics stratified by NPs and PAs. PAs (mean age 42.5 years) are statistically significant ($p < 0.001$) younger compared with NPs (mean age 48.8 years). However, NPs and PAs did not differ in terms of gender ($p = 0.05$), religion ($p = 0.54$), and work setting ($p = 0.58$). Moreover, the prevalence of politically conservative and liberal orientation also did not differ significantly ($p = 0.14$) across both professions.

4.1 | Differences between NPs and PAs across instruments

About moral reasoning (N2), no statistically significant difference ($p = 0.24$) between NPs (mean = 28.3; SD 12.5) and PAs (mean = 30.7; SD 12.1) occurred. Non-significant differences also accounted for the personality meta-traits Stability (NPs: mean = 45.3, SD 18.9; PAs: mean = 50.1, SD 21.2; $p = 0.15$) and Plasticity (NPs: mean = 58.7, SD 15.0; PAs: mean = 53.73, SD 20.0; $p = 0.08$). With respect to moral disengagement (Moral Disengagement Scale), also no statistically significant differences emerged: NPs (mean = 20.3; SD 9.4) and PAs (mean = 21.5; SD 7.8), $p = 0.39$. Based on these results, merging the samples for analyses was considered justified.

4.2 | Higher-order meta-traits of personality

For assessing the two meta-traits Stability and Plasticity using the BFI we followed the factor analytical steps as employed by Van der Linden et al. (2010). The criterion of eigenvalue > 1 and oblique rotation methods initially led to a two-factor solution. The first factor had an eigenvalue of 2.0 and explained 40% of the Big Five variance. Conscientiousness, agreeableness, and emotional stability (i.e. the reverse of neuroticism) loaded highly on this first factor (0.71, 0.82 & -0.55 respectively). This first factor is similar to the factor Stability or α found by others (DeYoung et al., 2002; Digman, 1997; Van der Linden et al., 2010). The second factor had an eigenvalue of 1.0 and explained 21% of the variance. Openness and extraversion loaded substantially on this factor (0.91 & 0.57 respectively) while van der Linden and colleagues found loadings of 0.99 and 0.39 respectively. This factor is similar to Plasticity or β (Van der Linden et al., 2010).

We applied confirmatory factor analysis using maximum likelihood estimates to test the factorial structure of the two components α and β as a result of exploratory factor analysis against our data. Hypothesizing and testing the two meta-factors – where Stability comprised conscientiousness, agreeableness, and neuroticism, while Plasticity encompassed openness and extraversion – yielded a good model fit. The items of the BFI loaded as expected on the two meta-factors (see Figure 1) with the following parameters: $\chi^2 = 3.341$, $df = 4$, $p = 0.506$, RMSEA = 0.001, CFI = 1.00, TLI = 1.023. Both Stability and Plasticity also demonstrated good internal consistencies, with Cronbach's alphas of 0.79 and 0.80, respectively.

4.3 | Path analysis of personality, moral reasoning, and mechanisms of moral disengagement

The tenability of the hypothesized model (as depicted in Figure 1) was tested to address the study aim. Prior to SEM, correlation analysis among the variables of interest was performed (See Table 2). Path analysis confirmed that Stability regressed statistically significantly ($\beta = 1.74^{**}$) on moral reasoning but did not account for Plasticity toward moral reasoning ($\beta = -0.74$). Direct paths from Stability and Plasticity to moral disengagement had negative beta coefficients, indicating that moral self-control is increased by having more characteristics that belong to both personality traits ($\beta = -0.19^{**}$ and $\beta = -0.24^{**}$ respectively). The influence of both personality traits also increased the influence of lower levels of moral disengagement on moral reasoning ($\beta = -2.87$).

TABLE 2 Correlation matrix of all variables prior to inclusion in structural equation modelling

	Stability (α)	Plasticity (β)	Moral disengagement
Stability (α)			
Plasticity (β)	0.33**		
Moral disengagement	-0.27**	-0.30**	
Moral reasoning	0.18*	0.06	-0.25**

* $p < 0.05$; ** $p < 0.01$.

TABLE 3 Structural equation model with maximum likelihood estimates and indirect effects ($N = 155$)

Structural	Coefficient	SE	z	$p > z $	95% confidence interval
Moral disengagement <-					
Stability (α)	-0.19	0.064	-3.16	0.002	-0.31 > -0.07
Plasticity (β)	-0.24	0.003	-72.25	<0.001	-0.24 > -0.23
_cons	0.02	0.022	1.00	0.32	-0.02 > 0.07
Moral reasoning <-					
Moral disengagement	-2.87	0.482	-5.94	<0.001	-3.81 > -1.92
Stability (α)	1.74	0.750	2.33	0.02	0.27 > 3.21
Plasticity (β)	-0.74	0.543	-1.36	0.17	-1.81 > 0.32
_cons	29.68	1.373	21.62	<0.001	26.99 > 32.37
Indirect effects	Coefficient	SE	z	$p > z $	95% confidence interval
Moral reasoning <-					
Moral disengagement					
Stability (α)	0.54	0.26	2.06	0.04	0.027 > 1.06
Plasticity (β)	0.68	0.12	5.49	<0.001	0.43 > 0.92

Note. Bold numbers are statistically significant at $p < 0.05$.

Furthermore, in the relationships between Stability and Plasticity with moral reasoning, statistically significant indirect effects ($\beta = 0.54^*$ and $\beta = 0.68^{**}$ respectively), occurred through moral disengagement. However, due to the absence of a direct effect from Plasticity on moral reasoning, moral disengagement only mediated the relationship between Stability and moral reasoning (See Table 3 for path coefficients and the related confidence intervals). The model yielded good model fit, considering the following fit parameters: RMSEA = 0.003, CFI = 1.000, and TLI = 1.000. The substantially lower Akaike Information Criterion (AIC) of 2,477, derived from the model with the two meta-traits, compared with a model where the five personality traits were included separately (AIC = 3,706), proved the advantage of using the two meta-traits Stability and Plasticity (Akaike, 1974).

5 | DISCUSSION

With this study, we aimed to discover whether there is a relationship between the personality meta-traits Stability and Plasticity and the level of moral reasoning and to assess whether the propensity to morally disengage explains those relationships. SEM (i.e. path analysis) provided evidence that only Stability directly increased the level of moral reasoning. This finding adds to the literature on the effect of personality traits on moral reasoning. Few of the earlier research has addressed this question and has yielded fragmented and inconsistent outcomes and assumptions. For example, while Rest and colleagues claimed that personality traits should have weak associations with cognitive moral development (Rest, Narvaez, Bebeau, & Thoma, 1999), several other researchers found associations between the Big Five personality traits and moral reasoning (Athota et al., 2009; Derryberry et al., 2005; Dollinger & LaMartina, 1998). Notwithstanding, these findings seem rather an exception to the rule, especially considering Rest et al.'s (1999) claim that 'of approximately 150 correlations

between the DIT and personality measures, most are non-significant' (p. 108). One reason that findings appear neither consistent nor non-significant across varying populations might be autocorrelation among the Big Five personality traits. Transforming the Big Five personality traits into the higher-order, meta-traits Stability (α) and Plasticity (β) address the issue of autocorrelation. Our finding that Stability predicted the level of moral reasoning supports the idea that the latent trait personality-stability represents characteristics that reflect a 'moral person', as suggested by Brown & Treviño, 2006; Kalshoven et al., 2011 and Walumbwa & Schaubroeck, 2009.

The second finding from this study is that Stability and Plasticity influence the level of moral disengagement. To our knowledge, this is the first to investigate the relationship between these personality meta-traits and moral disengagement. While there was already evidence that separate Big Five traits are related to moral disengagement (Fida et al., 2016; Kish-Gephart, Detert, Treviño, Baker, & Martin, 2014; Stevens, 2010), our data reveal that Stability and Plasticity also predict moral disengagement. These findings also suggest that Stability and Plasticity contribute to moral self-regulation.

This study also found that people with a low propensity to morally disengage (i.e. high levels of moral self-control) tend to judge at higher levels of moral reasoning. This supports Bandura's assumption that a higher level of moral reasoning is also determined by exerting moral self-control (Bandura, 1991). Even though this finding is not new, it is consistent with (albeit stronger than) the effect as shown in a study by Carroll (2009). This repeated result demonstrates the robustness of Bandura's theoretical assumption when applied to a different population.

Furthermore, the outcomes of this study provide novel evidence that Stability and Plasticity have an indirect effect on the level of moral reasoning through moral disengagement. The mediating effect of moral disengagement on the relationship between Stability and Plasticity with moral reasoning has never been examined before.

Although the results show that Stability and Plasticity both have an indirect effect on moral reasoning through moral disengagement, we can only conclude that moral disengagement is an explanatory factor in the trait-moral reasoning relationship for Stability and not for Plasticity, since no direct effect between Plasticity and moral reasoning was found.

Thus, our findings suggest that stable people reason on a higher moral level because they are more able to exert moral self-control. This higher moral self-control is plausible considering the characteristics of the Stability personality type, because of the tendencies to be more self-disciplined, persistent, thorough, responsible, consistent in emotions and social interaction, and sensitive to interpersonal conflicts. Possessing such qualities might mean that stable people can more strongly inhibit themselves from engaging in self-serving cognitive morally disengaging strategies and can thus remain at a mature level of moral reasoning.

Although we also found that Plasticity has an indirect effect on moral reasoning through moral disengagement, Plasticity does not exert a direct effect on moral reasoning. Therefore, we are reluctant to conclude that Plasticity's effect on moral reasoning is mediated by moral disengagement. That may be the case, but it may also be mediated by other factors working in the opposite direction. For example, Plasticity may increase creativity, which decreases moral reasoning since creative people are more likely to think of moral rationalizations for immoral actions (Gino & Ariely, 2012). However, more research is needed to investigate such possible confounders.

5.1 | Practical implications

Working as a healthcare professional is demanding. The challenges arising from economic constraints imposed by health insurers – as well as factors such as the increasing demands of employers and increasingly empowered patients, in contrast to a desire to deliver the same standard of quality care – may evoke moral dilemmas.

The curriculums used to train healthcare professionals address professionalism to some extent, by way of courses including clinical ethics. The literature makes note of such courses in training programs for professionals such as nurses, physical therapists, pharmacists and medical doctors. However, these courses largely emphasize moral reasoning (Dieruf, 2004; Duckett et al., 1997; Prescott, Becket, & Wilson, 2014; Self, Baldwin, & Olivarez, 1993). The outcomes of our study provide evidence that training programs can only increase moral reasoning strategies to a certain extent. After all, the level of moral reasoning is a function of the Stability personality type and personality is largely stable over a person's lifespan (McCrae & Costa, 1999, p. 145).

Therefore, another way to foster principled moral reasoning among healthcare professionals would be to use the Big Five as a selection tool and select for the Stability personality type when hiring personnel. It is now common to include personality assessments in job application procedures. Selecting people with the Stability personality type might be of special importance in disciplines that are known to have a difficult moral climate (e.g. palliative care, intensive care).

Another important finding in this study is that the relationship between Stability and moral reasoning is mediated by moral

disengagement. Considering that disengagement from moral self-control is 'malleable to external influences over time' (Paciello, Fida, Tramontano, Lupinetti, & Caprara, 2008), something could be done to 'unlearn' people's tendency to morally disengage. In this view, it is advisable, in ethics courses, to counter the force of moral disengagement by practicing health practitioners (especially those who score low on the factor Stability) to morally *engage* instead. This is in line with the Aristotelian view that, although virtues are character traits, virtues are trainable. More specific, according to Aristotle, by practicing virtue, individuals acquire virtue (Urmson, 1988). This practicing is a rational process and involves finding a balance between extremes (e.g. finding the balance of 'honesty' between the extremes of 'secrecy' and 'talkativeness' and finding the balance of 'courage' between the extremes of 'cowardice' and 'rashness') (Larkin et al., 2009). Thus, in ethical training courses, students and healthcare professionals can not only be made aware that disengaging from moral self-control is non-virtuous (as it can cause harm and create a pathological basis for professional conduct) but can also be trained into mechanisms of moral engagement by practicing virtuous behaviours. This could be done by training in programs using simulation exercises (e.g. with standardized patients).

5.2 | Strengths and limitations

Although this study's findings are novel and contribute to understanding the influence of personality structures and mechanisms of moral disengagement on the level of principled moral reasoning, some methodological weaknesses should be addressed. First, the study data were derived from a cross-sectional sample, which confines the researchers to drawing causal conclusions.

Second, one could dispute the appropriateness of performing path analyses on data retrieved from cross-sectional collected self-report measures. This is especially true because the collected data may be subject to some extent of common method bias. However, prior to performing the path analysis, we used Harman's single-factor test to confirm that a single factor accounted for only 10.1% and thus less than the majority (i.e. 50%) of the variance in our data (Podsakoff & Organ, 1986). This indicates that, although there was likely some shared common method variance, it should have little to no effect on the conclusions drawn.

Finally, our findings may not be generalizable to populations outside the NP and PA workforces. Nevertheless, their sociodemographic characteristics are comparable to those of the national workforces at large, which makes the results generalizable to the population of NPs and PAs. In addition, this study involved NPs and PAs from the Netherlands, which may imply that the model should be tested in other countries that employ these types of healthcare professionals.

6 | CONCLUSION

The personality meta-trait Stability is an indicator of the level of moral reasoning among Dutch NPs and PAs. This is explained by a

lower propensity to morally disengage among highly stable people. In contrast, the meta-trait Plasticity also exerted an indirect effect on moral reasoning through moral disengagement, but it was not a direct indicator of moral reasoning.

ACKNOWLEDGEMENTS

The authors are grateful to the administrators of the PA and NP programs who showed their willingness to forward our invitation and information letter to their alumni to participate in this study. Finally, we would like to thank all the participants who donated their time to complete the questionnaires.

CONFLICT OF INTEREST

No conflict of interest has been declared by the author(s).

AUTHORS' CONTRIBUTIONS

LK, GJJ, BM, LBM, PFR: a) made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; b) involved in drafting the manuscript or revising it critically for important intellectual content; c) gave final approval of the version to be published; d) agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORCID

Luppo Kuilman <https://orcid.org/0000-0003-3483-3265>
Laetitia B. Mulder <https://orcid.org/0000-0003-3203-7601>

REFERENCES

- Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19(6), 716–723.
- Athota, V. S., O'Connor, P. J., & Jackson, C. (2009). The role of emotional intelligence and personality in moral reasoning. In R. E. Hicks (Ed.), *Personality and individual differences: Current directions*. Bowen Hills, QLD: Australian Academic Press.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall Inc.
- Bandura, A. (1990). Selective activation and disengagement of moral control. *Journal of Social Issues*, 46(1), 27–46.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248–287.
- Bandura, A. (1999) Social cognitive theory of personality. In L. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 154–196). Amsterdam, Netherlands: Elsevier.
- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology*, 71(2), 364.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588.
- Brown, M. E., & Treviño, L. K. (2006). Ethical leadership: A review and future directions. *The leadership quarterly*, 17(6), 595–616.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions*, 154, 136–136.
- Bruijn-Geraets, D., Daisy, P., Eijk-Hustings, V., Yvonne, J., & Vrijhoef, H. J. (2014). Evaluating newly acquired authority of nurse practitioners and physician assistants for reserved medical procedures in the Netherlands: A study protocol. *Journal of Advanced Nursing*, 70(11), 2673–2682.
- Burston, A. S., & Tuckett, A. G. (2013). Moral distress in nursing: Contributing factors, outcomes and interventions. *Nursing Ethics*, 20(3), 312–324.
- Carroll, J. A. (2009). *Impact of moral judgment and moral disengagement on rape-supportive attitudes in college males*. Tuscaloosa, AL: The University of Alabama.
- Chovan, W. (2007). Some notes on the relation of moral reasoning and personality. *Psychological Reports*, 101(1), 61–66.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, MI: Erlbaum Associates.
- Costa, P. T., & McCrae, R. R. (1992). *NEO PI-R professional manual*. Odessa, FL: Psychological Assessment Resources.
- De Haan, J. (2001). The definition of moral dilemmas: A logical problem. *Ethical Theory and Moral Practice*, 4(3), 267–284.
- Denissen, J. J., Geenen, R., Van Aken, M. A., Gosling, S. D., & Potter, J. (2008). Development and validation of a Dutch translation of the Big Five Inventory (BFI). *Journal of Personality Assessment*, 90(2), 152–157.
- Derryberry, W. P., Wilson, T., Snyder, H., Norman, T., & Barger, B. (2005). Moral judgment developmental differences between gifted youth and college students. *Journal of Secondary Gifted Education*, 17(1), 6–19.
- DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology*, 91(6), 1138.
- DeYoung, C. G., Peterson, J. B., & Higgins, D. M. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences*, 33(4), 533–552.
- Dieruf, K. (2004). Ethical decision-making by students in physical and occupational therapy. *Journal of Allied Health*, 33(1), 24–30.
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology*, 73(6), 1246.
- Dineen, K. K. (2012). Moral disengagement of medical providers: Another clue to the continued neglect of treatable pain. *Houston Journal of Health Law and Policy*, 13, 163.
- Dollinger, S. J., & LaMartina, T. K. (1998). A note on moral reasoning and the five-factor model. *Journal of Social Behavior and Personality*, 13(2), 349.
- Duckett, L., Rowan, M., Ryden, M., Krichbaum, K., Miller, M., Wainwright, H., & Savik, K. (1997). Progress in the moral reasoning of baccalaureate nursing students between program entry and exit. *Nursing Research*, 46(4), 222–229.
- Fida, R., Tramontano, C., Paciello, M., Kangasniemi, M., Sili, A., Bobbio, A., & Barbaranelli, C. (2016). Nurse moral disengagement. *Nursing Ethics*, 23(5), 547–564.
- General Assembly of the World Medical Association. (2014). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *The Journal of the American College of Dentists*, 81(3), 14–18.
- Gino, F., & Ariely, D. (2012). The dark side of creativity: Original thinkers can be more dishonest. *Journal of Personality and Social Psychology*, 102(3), 445.
- Guillemin, F., Bombardier, C., & Beaton, D. (1993). Cross-cultural adaptation of health-related quality of life measures: Literature review and proposed guidelines. *Journal of Clinical Epidemiology*, 46(12), 1417–1432.

- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The big five inventory—Versions 4a and 54*. Berkeley, CA: University of California.
- Kalshoven, K., Den Hartog, D. N., & De Hoogh, A. H. (2011). Ethical leader behavior and big five factors of personality. *Journal of Business Ethics*, 100(2), 349–366.
- Kish-Gephart, J., Detert, J., Treviño, L. K., Baker, V., & Martin, S. (2014). Situational moral disengagement: Can the effects of self-interest be mitigated? *Journal of Business Ethics*, 125(2), 267–285.
- Kline, R. (1998). *Principles and practice of structural modeling*. New York, NY: The Guilford Press.
- Kohlberg, L. (1969). *Stage and sequence: The cognitive-developmental approach to socialization*. Chicago, IL: Rand McNally.
- Larkin, G. L., Iserson, K., Kassutto, Z., Freas, G., Delaney, K., Krimm, J., ... Adams, J. (2009). Virtue in emergency medicine. *Academic Emergency Medicine*, 16(1), 51–55.
- Laurant, M. G., Hermens, R. P., Braspenning, J. C., Akkermans, R. P., Sibbald, B., & Grol, R. P. (2008). An overview of patients' preference for and satisfaction with, care provided by general practitioners and nurse practitioners. *Journal of Clinical Nursing*, 17(20), 2690–2698.
- Maten-Speksnijder, A., Grypdonck, M., Pool, A., Meurs, P., & Staa, A. V. (2014). A literature review of the Dutch debate on the nurse practitioner role: Efficiency vs. professional development. *International Nursing Review* 61(1), 44–54.
- McCrae, R. R., & Costa, P. T. Jr. (1999). A five-factor theory of personality. *Handbook of Personality: Theory and research*, 2, 139–153.
- Mudrack, P. E. (2006). Moral reasoning and personality traits. *Psychological Reports*, 98(3), 689–698.
- Newcombe, R. G., & Altman, D. G. (2000). Proportions and their differences. *Statistics with Confidence*, 2, 45–56.
- Paciello, M., Fida, R., Tramontano, C., Lupinetti, C., & Caprara, G. V. (2008). Stability and change of moral disengagement and its impact on aggression and violence in late adolescence. *Child Development*, 79(5), 1288–1309.
- Pauly, B. M., Varcoe, C., & Storch, J. (2012). Framing the issues: Moral distress in health care. *HEC Forum*, 24(1), 1–11.
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544.
- Prescott, J., Becket, G., & Wilson, S. E. (2014). Moral development of first-year pharmacy students in the United Kingdom. *American Journal of Pharmaceutical Education*, 78(2), 36.
- Raaijmakers, Q., Engels, R., & Van Hoof, A. (2005). Delinquency and moral reasoning in adolescence and young adulthood. *International Journal of Behavioral Development*, 29(3), 247–258.
- Rest, J., Narvaez, D., Bebeau, M., & Thoma, S. (1999). A neo-Kohlbergian approach: The DIT and schema theory. *Educational Psychology Review*, 11(4), 291–324.
- Rest, J. R., Thoma, S. J., & Bebeau, M. J. (1999). *Postconventional moral thinking: A neo-Kohlbergian approach*. Mahwah, NJ: Erlbaum.
- Rest, J., Thoma, S. J., Narvaez, D., & Bebeau, M. J. (1997). Alchemy and beyond: Indexing the defining issues test. *Journal of Educational Psychology*, 89(3), 498.
- Roberts, B. W., Jackson, J. J., Fayard, J. V., Edmonds, G., & Meints, J. (2009). Conscientiousness. In M. Leary & R. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 369–381). New York, NY: Guilford.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23–74.
- Schuttelaar, M., Vermeulen, K., & Coenraads, P. (2011). Costs and cost-effectiveness analysis of treatment in children with eczema by nurse practitioner vs. dermatologist: Results of a randomized, controlled trial and a review of international costs. *British Journal of Dermatology*, 165(3), 600–611.
- Self, D. J., Baldwin, D. C. Jr., & Olivarez, M. (1993). Teaching medical ethics to first-year students by using film discussion to develop their moral reasoning. *Analysis*, 4, 109.
- Sporrong, S. K., Höglund, A. T., & Arnetz, B. (2006). Measuring moral distress in pharmacy and clinical practice. *Nursing Ethics*, 13(4), 416–427.
- Stern, D. T., & Papadakis, M. (2006). The developing physician—Becoming a professional. *New England Journal of Medicine*, 355(17), 1794–1799.
- Stevens, G. W. (2010). *Moral disengagement from an organizational justice perspective: An exploratory study*. Retrieved from <https://etd.auburn.edu/handle/10415/2268?show=full>
- Templeton, G. F., & Burney, L. L. (2016). Using a two-step transformation to address non-normality from a business value of information technology perspective. *Journal of Information Systems*, 31(2), 149–164.
- Timmermans, M. J., Vught, A. J., Van den Berg, M., Ponfoort, E. D., Riemens, F., Unen, J., ... Laurant, M. G. (2016). Physician assistants in medical ward care: A descriptive study of the situation in the Netherlands. *Journal of Evaluation in Clinical Practice*, 22(3), 395–402.
- Urmson, J. O. (1988). *Aristotle's ethics*. Oxford, UK: Basil Blackwell.
- van den Driesschen, Q., & de Roo, F. (2014). Physician assistants in the Netherlands. *Journal of the American Academy of Physician Assistants*, 27(9), 10–11.
- Van der Linden, D., te Nijenhuis, J., & Bakker, A. B. (2010). The general factor of personality: A meta-analysis of Big Five intercorrelations and a criterion-related validity study. *Journal of Research in Personality*, 44(3), 315–327.
- van Vught, A. J., van den Brink, G. T., & Wobbes, T. (2014). Implementation of the physician assistant in Dutch health care organizations: Primary motives and outcomes. *The Health Care Manager*, 33(2), 149–153.
- Walumbwa, F. O., & Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: Mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology*, 94(5), 1275.
- Zhang, L. (2006). Thinking styles and the big five personality traits revisited. *Personality and Individual Differences*, 40(6), 1177–1187.
- Zwijnenberg, N. C., & Bours, G. J. (2012). Nurse practitioners and physician assistants in Dutch hospitals: Their role, extent of substitution and facilitators and barriers experienced in the reallocation of tasks. *Journal of Advanced Nursing*, 68(6), 1235–1246.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

How to cite this article: Kuilman L, Jansen GJ, Middel B, Mulder LB, Roodbol PF. Moral reasoning explained by personality traits and moral disengagement: A study among Dutch nurse practitioners and physician assistants. *J Adv Nurs*. 2019;75:1252–1262. <https://doi.org/10.1111/jan.13939>

The *Journal of Advanced Nursing (JAN)* is an international, peer-reviewed, scientific journal. *JAN* contributes to the advancement of evidence-based nursing, midwifery and health care by disseminating high quality research and scholarship of contemporary relevance and with potential to advance knowledge for practice, education, management or policy. *JAN* publishes research reviews, original research reports and methodological and theoretical papers.

For further information, please visit *JAN* on the Wiley Online Library website: www.wileyonlinelibrary.com/journal/jan

Reasons to publish your work in JAN:

- **High-impact forum:** the world's most cited nursing journal, with an Impact Factor of 1.998 – ranked 12/114 in the 2016 ISI Journal Citation Reports © (Nursing (Social Science)).
- **Most read nursing journal in the world:** over 3 million articles downloaded online per year and accessible in over 10,000 libraries worldwide (including over 3,500 in developing countries with free or low cost access).
- **Fast and easy online submission:** online submission at <http://mc.manuscriptcentral.com/jan>.
- **Positive publishing experience:** rapid double-blind peer review with constructive feedback.
- **Rapid online publication in five weeks:** average time from final manuscript arriving in production to online publication.
- **Online Open:** the option to pay to make your article freely and openly accessible to non-subscribers upon publication on Wiley Online Library, as well as the option to deposit the article in your own or your funding agency's preferred archive (e.g. PubMed).