Don't tell me what to do! Narcissism and advice taking : A meta-analysis and future research directions

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Review

Don't tell me what to do! Narcissism and advice taking: A meta-analysis and future research directions

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ABSTRACT

In this meta-analysis, we investigated whether people with narcissistic traits are less likely than others to take advice. Additionally, we checked whether this would be independent of the advice giver's expertise and explored other potential moderators. Previously published and unpublished research has produced contradictory results, which motivated this pre-registered meta-analysis ($k = 11$, total number of participants = 2697) on the relation between narcissism and advice taking. We found a stable and robust, small, negative relation. Neither expertise of the advice giver nor other moderators were significant. We included robustness checks regarding participants, report characteristics, as well as operationalization of narcissism and advice taking. Theoretical, methodological and practical implications (for example, possible consequences of having people with narcissistic traits in positions of responsibility) are discussed and future research directions are outlined.

1. Introduction

The consideration of expert advice is typically viewed positively. Accepting others' expertise, however, also means having to adapt one's own opinion (Bonaccio & Dalal, 2006). A review by Bonaccio and Dalal (2006) noted that little was known about individual differences in advice taking. Since then, a few studies have addressed this issue and have found that individual differences can play a role.

Individual differences should be relevant to the question of whether or not one accepts advice because perceptions of both self and others play a role in this matter. Accepting advice was found to depend on (1) one's own expertise (See et al., 2011) or rather, as we assume, one's perceived expertise and (2) the perceived expertise of the advice giver (Birnbaum & Stegner, 1979; Bonaccio & Dalal, 2006). Given that narcissism has been associated with the tendency to overestimate oneself and underestimate others (Ames & Kammrath, 2004), this trait is likely relevant to advice taking. When screening published (Kausel et al., 2015; O'Reilly & Hall, 2021) and unpublished studies (McNamara, 2018; Schultze, 2018), however, we found diverging evidence.

Gray literature is "evidence not published in commercial publications" (Paez, 2017, p. 233). Including gray literature provides a comprehensive perspective on existing evidence (Bellefontaine & Lee, 2014) as long as the quality of the research is good. It reduces publication bias, which is the bias towards publishing mostly significant results. As far as we are aware, no attempt has been made to synthesize research on this topic in a manner which includes gray literature.

In the present study, we conducted a preregistered systematic review and meta-analysis on narcissism and advice taking. We also examined the expertise of the advisor as a potential moderator and explored participant and report characteristics as well as operationalizations of narcissism and advice taking as further potential moderators.

1.1. Narcissism and advice taking

Narcissism. Narcissism research has traditionally distinguished between grandiose and vulnerable narcissism. Grandiose narcissism is mainly characterized by tendencies such as self-enhancement (Grijalva & Zhang, 2016). Vulnerable narcissism is characterized by low self-esteem, shame, and anxiety (Weiss & Miller, 2018). It is also related to distrust (Krizan & Johar, 2015; Miller et al., 2010) and the tendency to view others' intentions as malevolent (Miller et al., 2011). Recent research has made further distinctions but classical scales of narcissism like the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979) do not include these more recent distinctions.

Advice Taking. When someone takes advice, they integrate others' recommendations into their own decision. Advice taking is commonly assessed with the so-called judge-advisor paradigm (Sniezek & Buckley, 1989; Sniezek & Buckley, 1995). The judge is the person who makes the

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decision and the advisor is the person who provides advice. In the typical experimental setting, the judge first makes a decision without advice and then receives information from the advisor. Typically, the judge receives a piece of information along with a note describing who the advisor was (for example, a previous participant or an expert on the matter). After having received the advice, the judge makes the final decision. Now, the researchers can calculate the weight that the judge gave the advice, that is, how much the final decision was influenced by the advice. Many, but not all studies included in our meta-analysis use this judge-advisor paradigm.

1.2. Narcissism and its relation to advice taking

Two published studies suggest that narcissism is negatively related to advice taking (Kausel et al., 2015; O'Reilly & Hall, 2021). This effect appeared to be mediated by an overestimation of one's own competence (O'Reilly & Hall, 2021) and a devaluation of the advisor's competence (Kausel et al., 2015). This is in line with the general plausibility of the idea that people with narcissistic traits are reluctant to accept advice. We thus collected, integrated, and synthesized published and unpublished data on the topic and tested the following hypothesis:

Hypothesis 1. Narcissism is negatively associated with advice taking.

While published research points to a small negative correlation between narcissism and advice taking, there is gray literature that provides different results. In fact, empirical results seem split, as unpublished data (Schultze, 2018) showed no significant correlation between narcissism and advice taking and a master's thesis (McNamara, 2018) reported a positive correlation between narcissism and advice taking. Thus, we think that the relation could be more complicated due to varying situational factors and facets of narcissism. People with narcissistic traits, especially those on the grandiose side, feel superior (Freis & Hansen-Brown, 2021) and want to show this. Thus, they may follow advice if they believe that this may help them to do well. For example, they may accept advice from an expert if they have little knowledge on the topic or if the context of advice taking is private. Thus, we think that under certain conditions people with grandiose narcissistic tendencies will be willing to take advice. By contrast, vulnerable narcissism could be related to low advice taking due to a general distrust of others (Krizan & Johar, 2015; Miller et al., 2010). If narcissism facets and situational factors are not distinguished, the overall relation between narcissism and advice taking could be an average effect that obfuscates the true and manifold associations between different shades of narcissism and advice taking in various contexts. Thus, we planned to distinguish facets of narcissism as a moderator. Additionally, we expected that advice would be more readily accepted in private and aimed to test privacy as another moderator.

As narcissism is related to underestimating others, we further assumed that the expertise of the advisor moderates the association between narcissism and advice taking. An early study showed that the advisor's expertise was positively associated with advice taking (Birnbaum & Stegner, 1979). Even if some studies mention the level of expertise of the advisor, we did not come across a systematic consideration of the source's expertise in research on advice taking and narcissism. In most of the studies, the participant is told whether the advisor has specific expertise on the matter, for example, the advisor may be described as a finance professor when the task involves finance. In other studies, there is no information on the advisor's expertise. We planned to distinguish level of expertise as another moderator.

On the one hand, people high in narcissism might feel threatened by others who offer advice, because they strive to be superior (Kong, 2015). This argument is in line with research showing that CEOs with narcissistic traits tended to act contrary to provided information (Zhu & Chen, 2015). Thus, we hypothesized:

Hypothesis 2a. The higher the source's described level of expertise, the stronger the negative association between narcissism and advice taking is.

On the other hand, we also considered the opposite relation: People with narcissistic traits tend to perceive other's competence as low (Kong, 2015), but at the same time they want to be perceived as intelligent (Zajenkowski et al., 2020). Thus, if a competent expert provides advice, they may see them as their equal and accept advice more readily than advice from others. Thus, the competing hypothesis is:

Hypothesis 2b. The higher the source's described level of expertise, the weaker the negative association between narcissism and advice taking is.

1.3. Further robustness checks on the relation between narcissism and advice taking

For a possible link between narcissism and advice taking to be generalizable, it should exist independent of participant and report characteristics as well as the specific operationalizations of narcissism and advice taking (for such an approach see Bücker et al., 2020; Körner et al., 2022). By testing these characteristics as moderators, we would be able to confirm a generalizable relation or figure out the reason for unstable results. Additionally, some of these aspects can be regarded as indicators of a study's quality.

Participant Characteristics. Regarding type of sample, we tested studies using panel participants against studies using students. Both groups are highly selective in their own way. Regarding mode of participation, we tested fully anonymous online studies against studies with in-person interaction, because direct interaction could increase concerns of self-presentation (Baumeister & Jones, 1978). To rule out cultural differences, we tested samples from Germany against those from the USA and other English-speaking cultures. Further, participant age and gender (Feng & MacGeorge, 2006) could affect willingness to take advice. Thus, we tested these two moderators. We also tested studies with incentivization against those without, because incentivization can affect effort in tasks (Camerer & Hogarth, 1999).

Report Characteristics. Publication status was tested (published in a peer-reviewed journal vs. gray literature) as significant results are more often published than others (Rosenthal, 1979). We also tested whether studies were preregistered, as preregistration prevents p-hacking (Simmons et al., 2021). Because paradigms and testing procedures may have shifted and participant attitudes could have changed (Twenge et al., 2008), we aimed to test year of data collection. Finally sample size, which affects significance, was tested.

Operationalization of Narcissism. With respect to measurement, we tested all scales against each other. The scales vary in their underlying definition of narcissism and in their focus, for example, they may focus on grandiose narcissism or may also include vulnerable aspects. We also tested the internal consistencies of the scales. Additionally, we tested studies that measured narcissism as a personality trait against studies that manipulated narcissism, as trait effects may be more stable and consistent than those which result from an experimentally induced state.

Operationalization of Advice Taking. If an effect only occurs with one specific operationalization, it cannot be generalized. Thus, we tested several specifications of advice taking experiments against each other. For example, advice could be more general or more specific. We tested numeric against other types of advice, because a specific number can function as an anchor (Röseler & Schütz, 2022). We also tested for the class of advice, that is, whether the answer was provided or information was given that helped the participant to find the right answer. Further, we distinguished whether the advice was a previous participant's answer or if it was the true score. Additionally, we tested measurement paradigms against each other: the Judge-Advisor-System (see Section 1.1), studies based on vignettes as options for decisions, and the "acquire a company" problem (Bazerman & Samuelson, 1983; Valley et al., 1998).

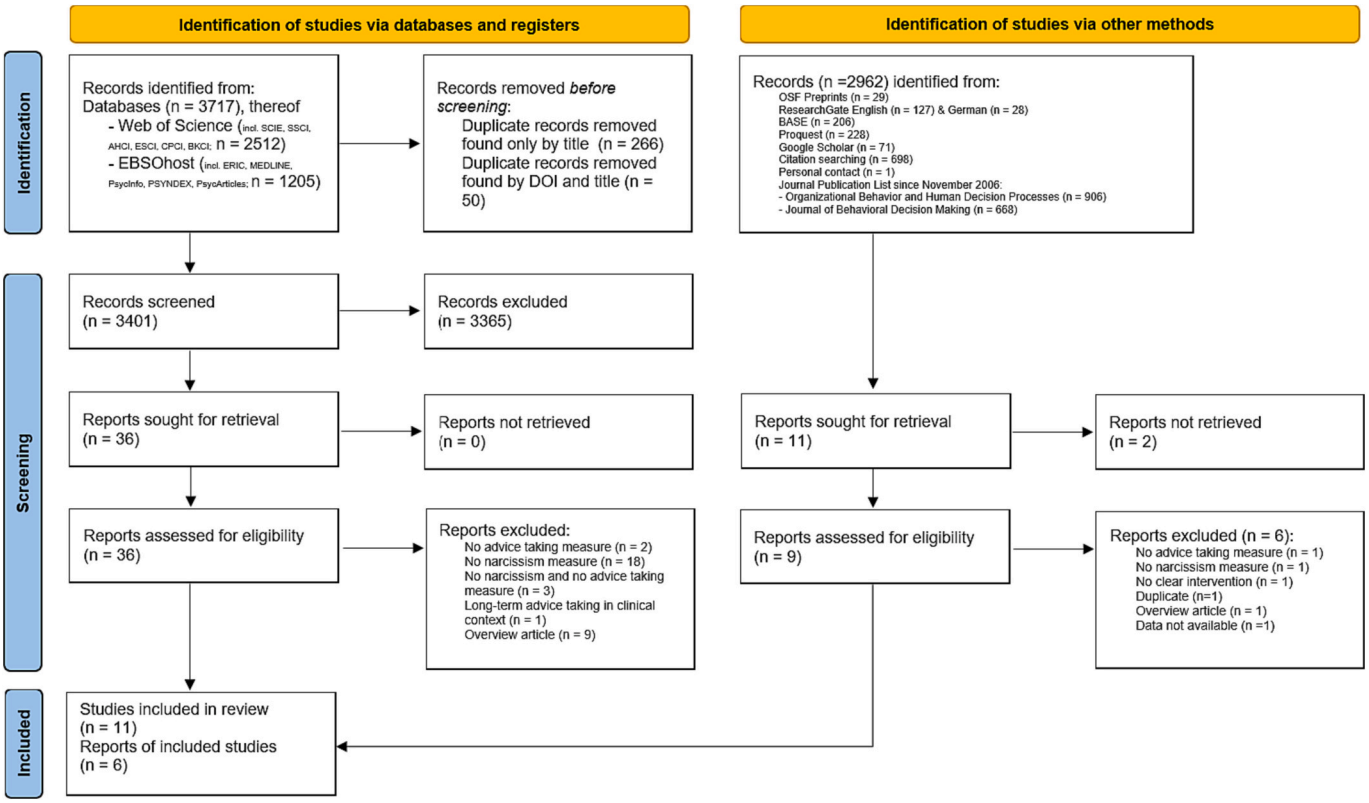

Fig. 1. Preferred reporting items for systematic reviews and meta-analyses flow diagram.
Note. PRISMA flow diagram based on Page et al. (2021).

Further, we tested types of measurements of dependent variables: One commonly used measure for the Judge-Advisor-System is the weight of advice (WOA), a proportion derived from numeric estimates (Harvey & Fischer, 1997). Other studies use adaptations of the WOA or categorical decisions as the dependent variable. We also tested the number of items used to assess advice taking, as results are more stable with a larger number of items. Importantly, people with narcissistic traits tend to cheat when confronted with challenges (O'Reilly & Doerr, 2020) and thus, a systematic error can occur if the study does not use preventive measures against cheating. Thus, we tested whether a measure to prevent cheating was implemented. If so, we distinguished between types of methods to prevent cheating. For example, prevention methods include conducting the testing in person, using specific task designs like estimating the weight of a person in a photo rather than asking a knowledge question, or eliminating suspicious participants afterwards. Further, we checked whether the inclusion of control variables made a difference, as results can be affected by the inclusion of control variables. We also tested how many control variables were included.

2. Methods

We preregistered the procedure, extraction rules and the code on https://osf.io/wfmr5. We mentioned all deviations from the preregistration throughout this paper. We shared all final procedures, materials, datasets, and code on the Open Science Framework [Enter final link]). The procedure is analogous to previous meta-analyses (Bücker et al., 2020; Körner et al., 2022). The reporting of methods and results in this paper is based on the template from Yeung et al. (2022).

2.1. Literature search

In July 2022, we searched eleven databases (see Fig. 1) via the interfaces Web of Science and EBSOhost and identified a sample of 3717 studies as illustrated in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram in Fig. 1. Boolean Logic operators such as "OR" and "AND" were used in the search pattern to connect narcissism and advice taking, resulting in the following main search string: *("dark core" OR "dark personality traits" OR "dark traits" OR "dark tetrad" OR "dark triad" OR ego* OR entitlement OR grandios* OR narcissis* OR rivalry OR admiration OR Narcissistic Personality Inventory OR NPI OR Narcissistic Admiration and Rivalry Questionnaire OR NARQ OR Communal Narcissism Inventory OR CNI OR Pathological Narcissism Inventory OR PNI OR Five Factor Narcissism Inventory OR FFNI OR Grandiose Narcissism Scale OR GNS OR Narcissistic Grandiosity Scale OR NGS OR Single Item Narcissism Scale OR SINS OR Unified Narcissism Scale OR UNS OR Dirty Dozen Inventory OR NSDD OR Short Dark Triad Scale OR SD3 OR Psychological Entitlement Scale OR PES OR Hypersensitive Narcissism Scale OR HSNS) AND (advice OR advis* OR judge advisor system OR JAS OR acquire a company problem).*[1] Adjusting for duplicates, a total of 3401 articles were initially identified and downloaded from the primary database search.

After that, a search for relevant research and data not listed in the primary database search via other methods was conducted in August 2022, as considered an essential part of a meta-analysis process to reduce the effect of publication bias and prevent overestimation of effect sizes (Feltz & May, 2017). We searched for papers or data sets listed under the OSF Preprints, ResearchGate, ProQuest and Google Scholar in English and German. Additionally, we conducted another round of searching by checking the reference sections of articles from our primary

[1] For Web of Science, the first part of keywords on narcissism were too many for one search. Thus, we applied two searches, one after the other, the first one with all keywords until *NPI*, the second one with all keywords starting from *Five Factor Narcissism Inventory*. The second part of the search string was identical in both searches.

Reference	Paper	Study	Sample	Effect Size
Kausel et al., 2015 – 1	1	1	1	1
Kausel et al., 2015 – 2	1	2	2	2
Kausel et al., 2015 – 3	1	3	3	3
Kausel et al., 2015 – 4	1	4	4	4
Kausel et al., 2015 – 5	1	4	5	5
Kausel et al., 2015 – 6	1	4	6	6
O'Reilly & Hall, 2021 – 7	2	5	7	7
O'Reilly & Hall, 2021 – 8	2	6	8	8
Schultze, 2018 – 9	3	7	9	9
Schultze, 2018 – 10	3	7	9	10
Schultze, 2018 – 11	3	7	9	11
Schultze, 2018 – 12	3	7	9	12
Schultze, 2018 – 13	3	7	9	13
O'Reilly et al., 2018 – 14	4	8	10	14
O'Reilly et al., 2018 – 15	4	8	10	15
O'Reilly et al., 2018 – 16	4	8	10	16
O'Reilly et al., 2018 – 17	4	9	11	17
O'Reilly et al., 2018 – 18	4	9	11	18
O'Reilly et al., 2018 – 19	4	9	11	19
Otterbring et al., 2021 – 20	5	10	12	20
McNamara, 2018 – 21	6	11	13	21
McNamara, 2018 – 22	6	11	13	22

Fig. 2. Overview on included studies.
Note. Numbers indicate the running numbers per paper, study, sample and effect size.

search. Additionally, we scanned journal publication lists since November 2006 from Organizational Behavior and Human Decision Processes and Journal of Behavioral Decision Making.

Furthermore, we identified eight authors in the field of the narcissism and advice taking literature. We searched through their publications and contacted them to ensure full coverage and maximize access to unpublished data and/or manuscripts that may be relevant (see Electronic Supplementary Materials, ESM 1). Lastly, we asked five professional psychology research associations to publish our call for unpublished papers (see ESM 1), resulting in publication of calls for papers in the mailing lists by German Society for Psychology, the Society for Judgment and Decision Making and the Open Forum of the Society for Personality and Social Psychology. Following these additional search procedures, we identified an additional 2962 records.

The lead author then scanned all titles and abstracts to identify the relevance of the sources. Of these articles, 47 indicated relevance for our analysis and we were able to retrieve 45 articles thereof in full. The full articles were read by the lead author and a research assistant independently to determine whether they met the inclusion and exclusion criteria (see paragraph 2.2 Inclusion and Exclusion Criteria) or whether articles had to be excluded. Of the 45 reports assessed for eligibility, 25 reports did not report measures of advice taking and/or narcissism, one report referred to long-term use of advice, ten reports were overview articles, one report did not include a clear intervention, one report was a duplicate, and for one report, the relevant data were not available (even after contacting the author). This screening reduced the number of included papers to six.

The reliability of the screening was good (Koo & Li, 2016), with a two-way absolute agreement intraclass correlation coefficient (ICC) of 0.79, 95 % CI [0.64; 0.88]. During a discussion of the two screeners, two studies were additionally excluded, leading to an excellent reliability of ICC 0.92, 95 % CI [0.86; 0.96]. After that discussion, the screeners still disagreed on one article. The disagreement was resolved by a discussion with the second author who decided to exclude the article.

We contacted authors of studies regarding missing data sets. If the original authors of the studies provided the data set but no results, the researchers conducted the analyses. We documented the relevant results in the coding sheet (see ESM 2), for an overview see Fig. 2. In total, we contacted six authors for the data from eight studies. All of them responded, and we were able to complete analyses for seven studies, which we included afterwards. All together the procedures led to the inclusion of six articles with eleven studies and with a total of 2697 participants.

2.2. *Quality of included studies*

A meta-analysis is meant to integrate similar or comparable studies of high quality. A focus on quality is especially recommended when including gray literature.

First, we established strict inclusion and exclusion criteria following the broadly recommended framework TOPICS-M (Johnson & Hennessy, 2019; see Fig. 3). We included only studies with human samples that examined short-term effects of advice taking. The outcome of interest of the study was to be the quantity of advice taken, measured, for example, as the weight of advice. The decision needed to be made immediately after advice was given. Experimental designs were of primary interest,

Time	short-term taking of advice; that is, directly after advice was provided
Outcome	quantity of advice taken; for example, weight of advice, if the JAS paradigm was used or a similar way of measuring advice
Participants	human samples
Intervention	advice had been given before the decision
Context	context-independent effects, for example independent of race, gender, geography
Study design	preferably experimental designs; for exploratory analyses, we will consider a wider range of designs
Moderators	1. Facet of narcissism 2. Source's described level of expertise *Participant characteristics* 3. *Type of sample 4. *Mode of participation 5. Culture of participants 6. Age 7. Proportion of females 8. Incentivization for correct answers *Report characteristics* 9. *Publication Status 10. *Preregistration 11. Year of data collection (or replaced by year of publication, if not specified in the paper) 12. *Sample size *Operationalization of Narcissism* 13. Scale of narcissism 14. *Manipulation of narcissism 15. *Internal consistency of narcissism scale[a] *Operationalization of Advice Taking* 16. Type of advice 17. Class of advice given 18. Actual source of advice 19. *Measurement of advice taking 20. Type of measurement of the dependent variable 21. *Number of items part of the advice taking measurement 22. Privacy of advice taking 23. *Prevention of cheating 24. Method of prevention of cheating 25. *Inclusion of control variables 26. *Number of control variables

Fig. 3. TOPICS-M Criteria.[a]
Note. To improve clarity, we made slight adjustments in the wording after preregistration. [a]Added after preregistration. * Quality indicator.

but we included all kinds of studies with an effect size (please note that the preregistration focused on experimental design, and we broadened this criterium to allow for higher coverage). We included a broad range of these moderators and did not exclude studies that did not provide information on all moderators. We adhered strictly to our criteria to ensure high quality in all studies included in our meta-analysis. For example, one study was excluded because it examined long-term effects of advice taking (von Cube, 1983).

Second, we included various moderators that are considered quality indicators in various ways. All of these quality indicators are marked with an asterisk in Fig. 3: The type of sample is a quality indicator, because one point of criticism for online panel data has been the quality

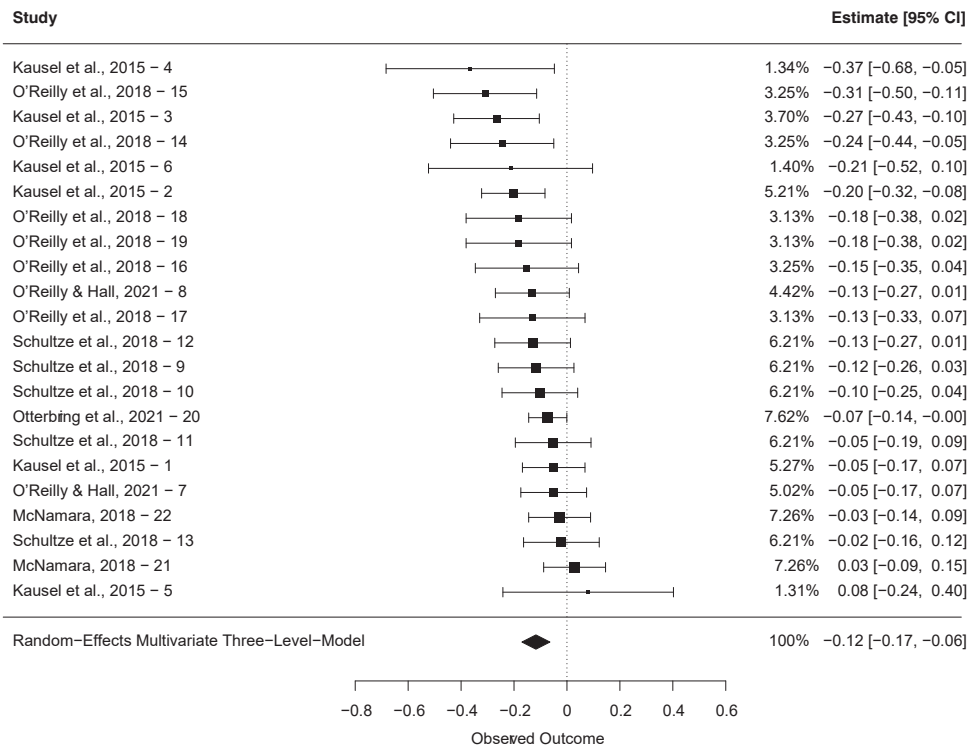

Fig. 4. Forest plot for model 1.

of answers (Hillygus et al., 2014). If participants do not read the advice but just answer randomly, and thus appear not to have accepted the advice, this would be a matter of quality. Regarding the mode of participation, in fully anonymous online studies participants may be less attentive to instructions than in studies with in-person interactions. Publication status (published vs. gray literature) is another quality indicator. The fact that published research involves peer review improves quality. During study design, preregistration is another quality indicator because it reduces the degrees of freedom that can be abused to conduct p-hacking (Simmons et al., 2021). Sample size provides further indication, as small sample sizes can lead to statistical fluctuation. Further, measuring narcissism as a personality trait (instead of manipulating it) could provide more stable and consistent effects. Additionally, the internal consistency of the scale is another variable that affects study quality. In regard to advice taking, the number of items used to measure the effect affects its stability. A further variable is whether an established paradigm was used. The prevention of cheating is another quality aspect: If, for example, judges cheat on their first decision by searching for the correct answer online, the possible variance induced by the advice is reduced. Research shows that people with narcissistic traits tend to cheat (O'Reilly & Doerr, 2020). Finally, the usage of multiple control variables without clear and compelling theoretical reasons (Bernerth & Aguinis, 2016), combined with a lack of preregistration, leaves the reader in doubt as to whether or not questionable research practices, for example p-hacking, had an impact on the reported findings.

2.3. Coding and reliability

We developed a data coding sheet and extraction rules based on two pilot studies to keep a clear record of our decisions at different stages and enhance reproducibility. The extraction rules were also preregistered.

After a full literature search, all studies were coded based on the extraction rules. A few adaptations to the extraction rules were made (as indicated in ESM 3). The lead author coded all of the eleven included studies. A research assistant double-coded 77 % of the materials. The interrater reliability after discussion was 99.6 %. We coded the included study information transparently, and the results of our coding process can be found in ESM 2.

2.4. Data analysis plan

We used RStudio with various packages for the statistical analyses, see ESM 4 for the code. To analyze the hypothesized main effect, we used three different approaches.[2] To account for dependence of effect sizes within the same articles, we calculated a random-effects multivariate three-level model, called model 1 (following Assink & Wibbelink, 2016). To also account for dependencies between the studies which were not fully captured by model 1, we also calculated a robust variance estimation, called model 2 (following Tanner-Smith et al., 2016). We conducted moderator analyses based on both models 1 and 2.

First, we calculated model 1 (random-effects multivariate three-level model). We plotted a forest plot presenting the effect size of each study. In our model, we assumed that individual effect sizes are nested within different studies. For analysis of moderators based on model 1, we ran a three-level mixed-effects model per moderator. We Fisher-z-transformed the correlations and standard errors as well as the continuous moderators. We dummy-coded the categorical moderators.

Second, we calculated model 2 (robust variance estimation) to account for additional dependencies that were not accounted for in the three-level model. For example, while we assumed in model 1 that there were dependencies at study level, there may have been further dependencies at the paper level, such as two different studies being conducted by the same authors. Robust variance estimation allowed

[2] We changed our preregistered approach after revisiting the data. We did not expect so many dependencies between the studies, for example, different measures of narcissism used on same data set. Thus, we needed to adapt our methods after literature search. We used more advanced and robust methods to account for higher dependencies in the data set.

Table 1
Results of moderator analysis for categorical moderators based on model 1.

Moderator	*k*	*N*	*r*	95 % CI	Diff	*p*
Facet of narcissism [a]						
Mixed	6	1193	0.13	[0.22, 0.04]		
Grandiose	16	2960	0.11	[0.09, 0.12]	0.01	.81
Source's described level of expertise [b]						
Low	13	2346	0.11	[0.19, 0.03]		
High	9	1807	0.13	[0.13, 0.09]	0.02	.73
Type of sample [c]						
Students	9	1357	0.09	[0.20, 0.02]		
Panel	13	2796	0.13	[0.16, 0.09]	0.04	.53
Mode of participation [c]						
Fully online	13	2796	0.13	[0.20, 0.06]		
Personality online, advice taking in person	9	1357	0.09	[0.09, 0.16]	0.04	.53
Culture						
Germany	5	955	0.08	[0.25, 0.09]		
USA	16	2455	0.13	[0.23, 0.13]	0.05	.59
Other English speaking	1	743	0.07	[0.23, 0.25]	0.01	.10
Incentivization						
No	10	2546	0.11	[0.18, 0.04]		
Yes	12	1607	0.13	[0.14, 0.09]	0.02	.67
Publication status						
Peer reviewed	7	1523	0.05	[0.14, 0.05]		
Gray literature	15	2630	0.14	[0.20, 0.02]	0.09	.09
Preregistration						
No	17	3198	0.12	[0.18, 0.06]		
Yes	5	955	0.09	[0.13, 0.21]	0.04	.63
Scale of narcissism [d]						
NPI	12	2374	0.11	[0.18, 0.04]		
NSDD	3	705	0.13	[0.16, 0.11]	0.03	.69
NARQ	2	382	0.14	[0.17, 0.10]	0.03	.64
Resick	2	204	0.15	[0.22, 0.14]	0.04	.65
Honesty-humility	2	204	0.12	[0.20, 0.16]	0.02	.85
SD3	1	284	0.12	[0.20, 0.17]	0.01	.90
Manipulation of narcissism						
No	20	3732	0.10	[0.15, 0.05]		
Yes	2	421	0.23	[0.27, 0.00]	0.13	.05
Type of advice [e]						
Numeric	15	2798	0.10	[0.17, 0.04]		
Other	7	1355	0.15	[0.16, 0.07]	0.04	.44
Class of advice [e]						
Information	7	1355	0.15	[0.25, 0.05]		
Answer	15	2798	0.10	[0.07, 0.16]	0.04	.44
Actual source of advice						
Previous participant	13	2346	0.11	[0.19, 0.03]		
True value	2	452	0.09	[0.14, 0.19]	0.02	.78
Experimentally designed answer	7	1355	0.15	[0.17, 0.09]	0.04	.54
Measurement paradigm						
Judge-Advisor-System	14	2546	0.11	[0.19, 0.04]		
Vignettes	7	1355	0.15	[0.16, 0.09]	0.04	0.56
Acquire a company problem	1	252	0.05	[0.15, 0.27]	0.06	.54
Type of measurement of the dependent variable						
Weight of advice	13	2346	0.11	[0.19, 0.03]		
Single decision	8	1607	0.13	[0.14, 0.11]	0.02	.78
Adaptation of weight of advice	1	200	0.13	[0.25, 0.21]	0.02	.86
Cheating prevention						
No	4	989	0.13	[0.24, 0.02]		
Medium	7	1485	0.07	[0.08, 0.21]	0.07	.37
Yes	11	1679	0.15	[0.16, 12]	0.02	.78
Method of cheating prevention						
Testing in person	6	1233	0.07	[0.17, 0.02]		
No cheating possible	10	1479	0.15	[0.19, 0.05]	0.07	.21
Elimination of suspicious participants	2	452	0.09	[0.17, 0.14]	0.02	.84
Inclusion of control variables						
No	11	1567	0.15	[0.25, 0.06]		
Yes	11	2586	0.10	[0.07, 0.17]	0.05	.38

Note. k = number of outcomes; N = total number of individuals in k; r = pooled z-transformed correlation, CI = lower and upper limits of 95 % confidence interval.

[a] No studies found using scales of vulnerable narcissism, thus, this moderator category was excluded.

[b] Source's level of expertise is the moderator related to our preregistered hypotheses H2a and H2b.

[c] *Type of sample* and *mode of participation* form the same groups: All studies coded as *students* are also coded as *personality online, advice taking in person*, while all studies coded as *panel* are also coded as *fully online*.

[d] For the *scale of narcissism,* we distinguish between the NPI, narcissism subscale of Dirty Dozen measure (NSDD; Jonason & Webster, 2010), Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013), Resick measure (Resick et al., 2009), Honesty-humility subscale of the HEXACO-60 (Ashton & Lee, 2009) and narcissism subscale of Short Dark Triad (SD3; Jones & Paulhus, 2014).

[e] *Type* and *class of advice* form the same groups: All studies coded as *numeric advice* are also coded as *advice that provides the answer*, while all studies coded as *other advice* are also coded as *advice through information*.

dependent effect sizes to be included in the same meta-analysis without knowing the covariance structure of effect sizes (Tanner-Smith et al., 2016). It additionally offered a correction for meta-analyses with a small number of included studies (Tipton, 2015), which we used. We applied correlated model weights, because we had multiple effect sizes estimated based on the same participant samples (Tanner-Smith et al., 2016). We calculated the main correlation with (r^+) and without (r) correction for measurement error (similar to Bücker et al., 2020). We Fisher-z-transformed the correlations and standard errors, dummy-coded the categorical moderators and centered the continuous moderators.

Null findings are less likely to be published (Begg & Berlin, 1988), resulting in biased published literature and a possible overestimation of effect size. To assess publication bias, we used different approaches. First, we analyzed the moderators *publication status* and compared published peer reviewed studies with gray literature, and *preregistered* vs. *not preregistered studies*. Second, we conducted funnel plots, trim and fill and an Egger's test for funnel plot asymmetry on study level (similar to Bücker et al., 2020; Körner et al., 2022). Third, we performed a PET-PEESE test.

3. Results

3.1. Model 1: three-level meta-analysis

The pooled z-transformed correlation based on Model 1, the three-level meta-analytic model, was $r =$ 0.12, 95 % CI [0.17, 0.06]. The estimated variance components were $\tau^2_{\text{Level 3}} = 0.003$ and $\tau^2_{\text{Level 3}} = 0.000$. This means that $I^2_{\text{Level 3}} = 36.6$ % of the total variation can be attributed to between-study, and $I^2_{\text{Level 2}} = 0$ % can be attributed to within-study heterogeneity. We found that the three-level model provided a slightly better fit compared to a two-level model with level 3 heterogeneity constrained to zero, when following AIC model selection ($AIC_{\text{three level}} =$ 34.6 vs. $AIC_{\text{two level}} =$ 33.5). As <75 % of the variance can be attributed to level 1 sampling variance, a moderator analysis is indicated (Hunter & Schmidt, 2004). The forest plot is presented in Fig. 4.

For the moderator analysis several distinctions were made. As preregistered, we differentiated between low and high expertise of the source of advice. We found six studies with low expertise, for example in the study from Kausel et al. (2015) the author framed the advice as the answers of a previous participant. Additionally, we found five studies with high expertise, for example in the study from Otterbring et al. (2021) the authors framed the advice as scientific estimates. As we did not find studies representing all variations, we were unable to test some of the moderators: we could not test against purely vulnerable narcissism as we did not find any study in that category to include. Additionally, we were not able to find variations on privacy, which is why we excluded it as a moderator.

Several different scales on narcissism were used. Eight studies used the NPI or short versions of it. Two studies manipulated narcissism. Only three studies did not prevent cheating at all, while in eight cases there were at least efforts to try and prevent cheating. Most of these studies used a design that did not permit cheating, for example in Study 2 by O'Reilly et al. (2018) an experimental setting based on a scenario was used, which does not allow for cheating. In other studies, such as Schultze (2018), the testing was conducted in person to prevent cheating. Only one study (Schultze, 2018) was preregistered. Eight studies did not provide any incentives for correct answers, while others paid participants small sums of money dependent on their performance, for example $2 in Study 2 by O'Reilly and Hall (2021). The moderator analysis based on model 1 revealed no significant moderators (see Table 1 for results regarding categorical moderators and Table 2 for results regarding continuous moderators).

Table 2
Summarized results of moderator analysis for continuous moderators based on model 1.

Moderator	β	*95 % CI*	*p*
Age	0.01	[0.07, 0.05]	.70
Proportion of females	0.00	[0.07, 0.07]	.96
Year of data	0.02	[0.02, 0.07]	.27
Sample size	0.03	[0.01, 0.07]	.19
Internal consistency of narcissism scale	0.01	[0.05, 0.02]	.42
Number of items	0.02	[0.05, 09]	.61
Number of control variables	0.01	[0.04, 0.06]	.59

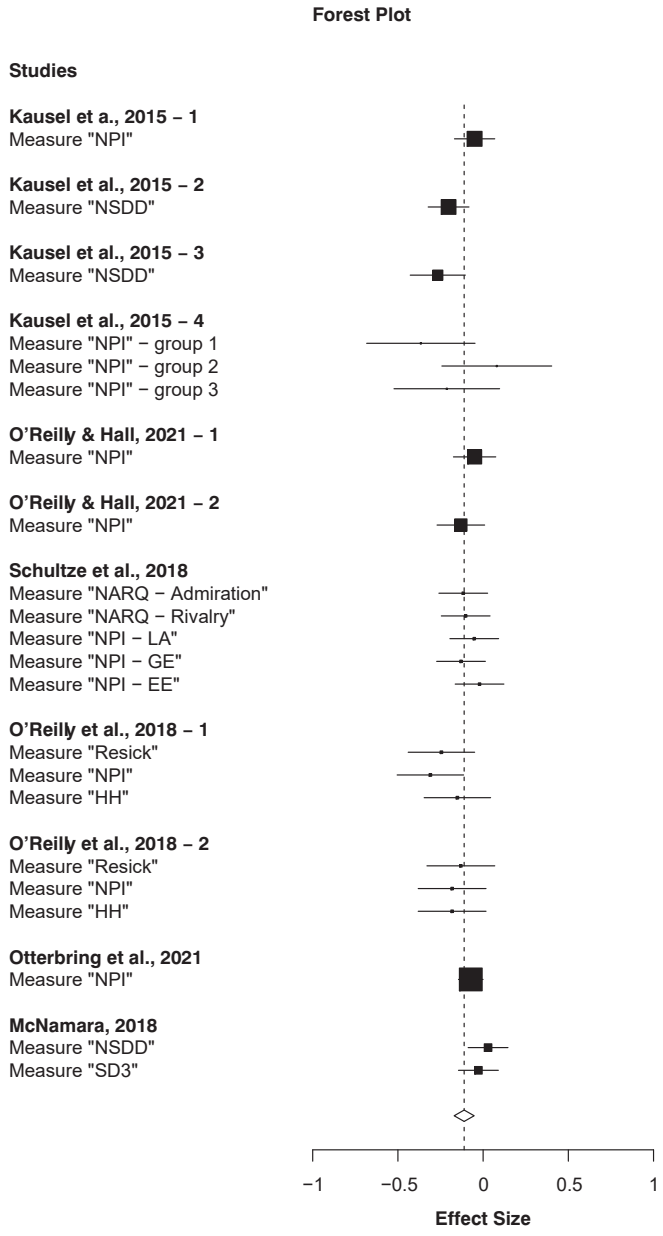

Fig. 5. Forest plot for model 2.

3.2. Model 2: robust variance estimation

The correlation that was pooled, z-transformed for measurement error corrected, and based on model 2 (the robust variance estimation) was $r^+ =$ 0.13, 95 % CI [0.19, 0.06]. Between-study heterogeneity was assessed as $\tau^2 = 0.004$, thus, $I^2 = 36.6$ % of the total variation can be

Table 3
Summarized results of moderator analysis for categorical moderators based on model 2.

Moderator	*j*	*k*	*df*	r	*95 % CI*	I^2	τ^2	*p*
Type of narcissism [a]								
Mixed†	5	6	3.8	0.17	[0.32, 0]	56.6	0.01	
Grandiose	8	16	4.4	0.11	[0.16, 0.06]	2.8	0	.57
Source's described level of expertise [b]								
Low	6	13	4.5	0.13	[0.26, 0]	58.0	0.01	
High†	5	9	2.5	0.12	[0.21, 0.02]	0	0	.96
Type of sample [c]								
Students†	3	9	1.3	0.08	[0.24, 0.08]	0.9	0	
Panel	8	13	6.4	0.14	[0.23, 0.05]	46.4	0	.34
Mode of participation [c]								
Fully online	8	13	6.4	0.14	[0.23, 0.05]	46.4	0	
Personality online, advice taking in person†	3	9	1.3	0.08	[0.24, 0.08]	0.9	0	.34
Culture††								
USA	9	16	7.2	0.14	[0.23, 0.05]	46.0	0.01	
Incentivization								
No	8	10	6.2	0.12	[0.21, 0.04]	45.5	0	
Yes†	4	12	2.6	0.14	[0.32, 0.05]	23.8	0	.56
Publication status								
Gray literature†	2	7	1	0.04	[0.56, 0.51]	15.5	0	
Peer reviewed	9	15	6.4	0.15	[0.22, 0.07]	28.8	0	.23
Preregistration of study ††								
No	10	17	7.7	0.13	[0.2, 0.06]	41.5	0	
Scale of narcissism [d]								
NPI	8	12	5.1	0.12	[0.18, 0.05]	21.4	0	.42
NSDD†	3	3	2.0	0.15	[0.52, 0.26]	82.4	0.02	.36
Resick†	2	2	1	0.2	[0.75, 0.51]	0	0	
Honesty-humility†	2	2	1	0.19	[0.4, 0.03]	0	0	.3
Manipulation of narcissism								
No	9	20	5.5	0.09	[0.14, 0.04]	7.6	0	
Yes†	2	2	1	0.24	[0.58, 0.17]	0	0	.09
Type of advice [e]								
Numeric	8	15	6.4	0.12	[0.21, 0.03]	45.2	0.01	
Other†	3	7	1.6	0.15	[0.44, 0.17]	31.4	0	.70
Class of advice [e]								
Information†	3	7	1.6	0.15	[0.44, 0.17]	31.4	0	
Answer	8	15	6.4	0.12	[0.21, 0.03]	45.2	0.01	.70
Actual source of advice								
Previous participant	6	13	4.5	0.13	[0.26, 0]	58.0	0.01	
True value†	2	2	1	0.1	[0.61, 0.46]	0	0	.66
Experimentally designed answer†	3	7	1.6	0.15	[0.44, 0.17]	31.4	0	.70
Measurement paradigm††								
Judge-Advisor-System	7	14	5.5	0.13	[0.23, 0.03]	50.2	0.01	
Vignettes†	3	7	1.6	0.15	[0.44, 0.17]	31.4	0	.70
Type of measurement of the dependent variable††								
Weight of advice	6	13	4.5	0.13	[0.26, 0]	58.0	0.01	
Single decision†	4	8	2.1	0.12	[0.25, 0.02]	15.3	0	.92
Cheating prevention								
No†	3	4	2.0	0.16	[0.49, 0.21]	77.3	0.02	
Medium†	3	7	2.0	0.07	[0.12, 0.02]	0	0	.12
Yes†	5	11	2.3	0.14	[0.29, 0.02]	9.6	0	.51
Method of cheating prevention								
Testing in person†	2	6	1	0.07	[0.3, 0.16]	0	0	.31
No cheating possible†	4	10	2.1	0.15	[0.35, 0.06]	30.7	0	
Elimination of suspicious participants†	2	2	1	0.1	[0.61, 0.46]	0	0	.88
Inclusion of control variables								
No†	3	11	1.9	0.17	[0.4, 0.08]	9.7	0	
Yes	8	11	6.2	0.12	[0.2, 0.04]	44.9	0	.47

Note. *j* = number of studies; *k* = number of outcomes; *df* = degrees of freedom; *r* = pooled z-transformed correlation, CI indicates the 95 % confidence interval; *p*-values indicate whether one category differed from the reference category.

† Corresponding *p*-values cannot be fully trusted because of small degrees of freedom (*df* < 4; Tipton, 2015).

†† RVE can only be calculated for categories with more than one study included. Thus, for the indicated moderators some categories were removed.

[a] No studies found using scales of vulnerable narcissism, thus, this moderator category was excluded.

[b] Source's level of expertise is the moderator related to our preregistered hypotheses H2a and H2b.

[c] *Type of sample* and *mode of participation* form the same groups: All studies coded as *students* are also coded as *personality online, advice taking in person*, while all studies coded as *panel* are also coded as *fully online*.

[d] For the *scale of narcissism,* we distinguish between the NPI, narcissism subscale of Dirty Dozen measure (NSDD; Jonason & Webster, 2010), Resick measure (Resick et al., 2009) and Honesty-humility subscale of the HEXACO-60 (Ashton & Lee, 2009).

[e] *Type* and *class of advice* form the same groups: All studies coded as *numeric advice* are also coded as *advice that provides the answer*, while all studies coded as *other advice* are also coded as *advice through information*.

Table 4
Summarized results of moderator analysis for continuous moderators based on model 4.

Moderator	*J*	*k*	*df*	*β*	*95 % CI*	I^2	τ^2	*p*
Age	10	19	2.8	0	[0.02, 0.01]	42.6	0	.70
Proportion of females	9	17	3.6	0.16	[0.83, 0.70]	29.8	0	.68
Year of data	11	22	4.8	0.01	[0.01, 0.04]	34.9	0	.24
Sample size	11	22	1.6	0	[0.001, 0.001]	36.7	0	.54
Reliability	11	22	4.4	0.3	[0.82, 0.48]	37.1	0	.37
Number of items	11	22	1.2	0	[0.002, 0.003]	41.8	0	.44
Number of control variables	11	22	3.4	0.01	[0.03, 0.05]	42.4	0.01	.62

Note. j = number of studies; k = number of outcomes; df = degrees of freedom; β = regression coefficients out of the RVE meta-regressions; CI indicates the 95 % confidence interval; *p*-values indicate whether the continuous moderator is significant.

Table 5
Publication bias analyses.

Publication bias analysis method	Results and adjusted models
Trim and fill funnel plot asymmetry	Four studies missing on the right side, all within the non-significant range Adjusted model: r = 0.07, 95 % CI [0.13, 0.01]
Egger's regression test	z = 1.68, p = .09
PET	b = 0.00, 95 % CI [0.18, 0.19], p = .94
PEESE	b = 0.07, 95 % CI [0.18, 0.04], p = .15

attributed to between-study heterogeneity. Without correction for measurement error, the pooled, z-transformed correlation was r = 0.11, 95 % CI [0.17, 0.05]. Between-study heterogeneity was assessed as $\tau^2 = 0.003$, thus, $I^2 = 39.5$ % of the total variation can be attributed to between-study heterogeneity. Overall, the heterogeneity was between low and moderate (following the rule of thumb from J. P. T. Higgins et al., 2003), thus, a moderator analysis may be helpful (even if it was not strongly indicated). The forest plot is presented in Fig. 5.

The moderator analysis based on model 2 revealed no significant moderators either (see Tables 3 and 4).

3.3. Publication bias

Several different approaches were used to assess publication bias. First, we analyzed the moderators *publication status* and *preregistered* vs. *not preregistered studies* (see results in Tables 1 and 3). Neither moderator was significant. Second, we conducted funnel plots, trim and fill and an Egger's test for funnel plot asymmetry on study level (see Table 5 for results and Fig. 6 for a funnel plot with "filled" studies, estimated from the trim-and-fill analysis). Visual inspection indicated four missing studies on the right side in the non-significant range, indicating a publication bias. However, Egger's test showed that the present funnel plot asymmetry was not significant (z = 1.68, p = .09). This indicated that, even though there was an asymmetry in the published results, the asymmetry did not lead to a significantly biased result. Third, we performed a PET-PEESE test. Both PET ($b = 0.00$, p = .94) and PEESE (b = 0.07, p = .15) intercepts were not significant, however, this result should be interpreted with caution, as even though PET-PEESE is a very common test, it performs badly in meta-analyses with a small number of studies (Stanley, 2017).

4. Discussion

The present meta-analysis brings together published and unpublished findings on narcissism and advice taking. We analyzed facets of narcissism, privacy of advice taking and the source's level of expertise as moderators. As robustness checks and indicators of study quality, we also checked for possible effects of other moderators, such as participant and report characteristics as well as operationalization of narcissism and advice taking.

4.1. Narcissism and advice taking

Our results support a negative relation between narcissism and advice taking. Both models indicate a small but stable pooled negative correlation. Thus, the main hypothesis H1 is fully supported. Even though there is some evidence for bias in the published results based on asymmetric effect sizes, this asymmetry does not impact the small negative correlation in a meaningful way. The result fits well into the overall definition of grandiose narcissism and the picture of people with narcissistic traits as being arrogant (Miller et al., 2021), overestimating their own competence (Ames & Kammrath, 2004) and devaluing others (Back, 2018). However, the effect is small. All studies reported linear correlations, which could disguise stronger effects, for example for extreme or even pathological forms of narcissism.

4.2. Moderators: facets of narcissism, source's level of expertise and additional robustness analyses

Our results support neither a moderation effect regarding facets of narcissism and privacy nor a moderation effect of source's level of expertise. Thus, both hypotheses H2a and H2b are rejected. Our results also do not provide evidence for any other moderation. In this meta-analysis, sample and report characteristics as well as operationalization of narcissism and advice taking or indicators of study quality do not have a clear effect on the link between narcissism and advice taking. Thus, based on existing published and unpublished research, we can conclude that the relation between narcissism and advice taking is negative, small, and robust.

4.3. Implications

On the theoretical side, our meta-analysis summarizes published and gray literature in the field of narcissism and advice taking, and complements an existing meta-analysis on the measurement of advice taking (Bailey et al., 2022) as well as literature reviews on advice taking (Bonaccio & Dalal, 2006) by taking a deeper look at the personality determinants of advice taking, in this case, narcissism.

On the methodological side, our meta-analysis illustrates the importance of including gray literature in meta-analyses. Taking existing null results seriously, and integrating them into existing published results is crucial for open science practices. However, in our case, after integrating unpublished research that contradicted published results, the association remained as indicated by the published research. Thus, integrating this part of the literature showed the strength and robustness of the literature in this field.

On the practical side, our meta-analysis provides another piece of the puzzle as to whether or not it is harmful for people with narcissistic traits to hold positions of responsibility. Merely being in a powerful position itself seems to reduce willingness to accept advice (See et al., 2011). Even if one acknowledges that not all advice is helpful, it should be the quality of the advice, and not one's own personality that determines whether or not advice is accepted. Studies in the field of narcissistic leadership focus on problems in interpersonal relationships in leaders with narcissistic traits (e.g., Fehn & Schütz, 2020). Our results extend that view and are in line with the idea that problems caused by people with narcissistic traits go beyond interpersonal issues (Braun, 2017).

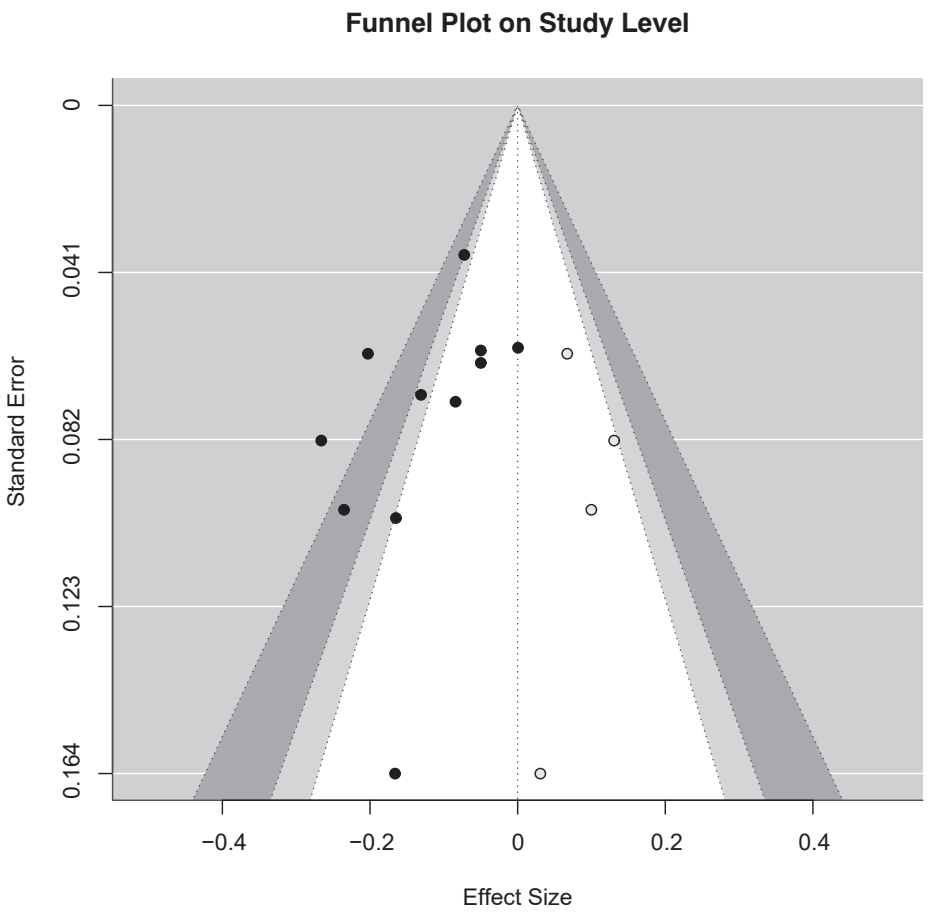

Fig. 6. Funnel plot with filled studies from the trim-and-fill analysis.
Note. Black circles indicate studies included in the meta-analyses. White circles indicate "filled" studies, which are missing to reach symmetric results. White area indicates non-significant area. Light gray indicates 95 % level, dark gray indicates 99 % level.

Narcissism, and the resulting reluctance to accept advice, may cause serious errors in decision making.

4.4. Limitations and future directions

We interpret the lack of evidence on moderating factors as an indication for a robust and stable, small, negative association between narcissism and advice taking. However, it is certainly possible that a more differentiated and broader set of studies would show evidence of moderation. We followed the rule of thumb of conducting moderator analyses with a minimum of 10 primary studies (Schwarzer et al., 2015), but other sources recommend including 40 or more primary studies (Viechtbauer et al., 2015). Based on our literature screening and meta-analysis, we recommend the following starting points for future research.

First, multidimensionality of narcissism: Most of the included studies use narcissism as a unidimensional construct. However, recent research views the construct as multidimensional and distinguishes three subdimensions of narcissism, which include: agentic (uniquely grandiose), antagonistic (vulnerable and grandiose mixed) and neurotic (uniquely vulnerable) narcissism (Miller et al., 2021). The agentic subdimension of narcissism is related to high self-assurance and assertive behavior (Back, 2018). By contrast, the antagonistic dimension is characterized by feelings of supremacy and a tendency to devalue others (Back, 2018). People high in narcissistic neuroticism are characterized by fragile self-esteem and shame (Miller et al., 2021). In our meta-analysis, only one unpublished study distinguishes between the agentic and antagonistic dimensions of narcissism and no study assesses the uniquely vulnerable subdimension of narcissistic neuroticism. Future research may aim at investigating possible distinctions between these variants of narcissism with regard to the tendency to accept advice. In addition to considering different dimensions, it may also be useful to look at both extreme and pathological forms of narcissism, as well as more common forms.

Second, while we see a stable and robust, small, negative association between narcissism and advice taking, we believe that under certain contextual circumstances (that have not been tested so far) there may still be room for variance. One contextual factor, for example, could be what is at stake for advice takers: Given the laboratory setting of all studies included, there was usually low or no incentivization for participants. People may behave differently if their own money, reputation or career success is at stake. This may be especially relevant for people with narcissistic traits who typically try to self-promote (i.e., in agentic narcissism) and defend their inflated self-views (i.e., high narcissistic neuroticism).

Another contextual factor is the public visibility of advice taking: All studies included in this meta-analysis conducted the advice taking process in privacy. There is an indication that people more extensively use advice in public than in private settings, for example in quiz shows (Lohre & Halkjelsvik, 2023). However, people with narcissistic traits strive to portray public images of competence (Collins & Stukas, 2008). This may result in a conflict for people with narcissistic traits: On the one hand, they would want to defend their inflated self-view and may need advice to make sure that they do not publicly fail. On the other hand, they may not want to publicly admit that they need advice. In line with the Dynamic Self-Regulatory Processing Model by Morf and Rhodewalt (2001), we think that the publicness of advice taking and responding

should matter. Given the narcissistic pattern of self-regulation, it is to be expected that a situation in which advice can be received privately and answers have to be provided publicly would increase advice taking in people with narcissistic traits. The contrary should be true if advice has to be taken in public and answers are provided in a more private or anonymous setting.

In addition, there may be more contextual factors one could think of in the context of narcissism and advice taking: Are other people affected by a decision? Is it a competitive situation, which should be especially relevant for the dimension of narcissistic rivalry? Can the advice taker lose or only win, in other words is self-promotion possible or self-protection warranted (E. T. Higgins, 1998)? What is the personal relationship between the advice taker and the potential advisor? Will the potential advisor know that the advice taker has used their advice? Is there an objectively correct answer or not?

Third, there are possible mediators: Some studies suggest that the negative relation between narcissism and advice taking may be mediated by an overestimation of the advice taker's own competence (O'Reilly & Hall, 2021) or their devaluation of the potential advisor's competence (Kausel et al., 2015). We were not able to meta-analyze this association, as there were not enough studies to do so, but it may be worthwhile to conduct further studies to gather evidence on such possible mediations.

We assume that, given the very stable and robust results, people with narcissistic traits typically tend to reject advice. However, contextual factors may moderate this association, that is, people with narcissistic traits may be more likely in some situations than in others to accept advice.

4.5. Conclusion

To conclude, our registered meta-analysis found substantial support for a small but stable negative correlation between narcissism and advice taking. Existing research does not provide evidence of any moderating effects, and the relation was very robust. There is room for future research, especially regarding contextual factors and multidimensional models of narcissism.

CRediT authorship contribution statement

Anna-Katharina Stöcker: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. **Astrid Schütz:** Conceptualization, Funding acquisition, Methodology, Project administration, Resources, Supervision, Validation, Writing – review & editing.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work the authors used ChatGPT and InstaText in order to improve readability and language. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Declaration of competing interest

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Data availability

We have shared the data and the code as part of the Electronic Supplementary Material.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2024.112607.

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