



# Going Beyond the Numerical Scoresheet: Identifying Maladaptive Narcissistic Traits in Residency Applicants

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**OBJECTIVE:** Certain personality traits assessed during interviews have been shown to negatively predict performance in residency. An informal needs assessment at our institution suggested that it would be particularly important to identify traits associated with maladaptive narcissism (i.e., entitlement, difficulty accepting criticism, and arrogance). The objective of this study was to evaluate an interview station designed to identify narcissistic personality traits among applicants to our general surgery residency program.

**DESIGN :** An interview station was developed in which applicants were provided negative feedback as a simulated evaluation. Two interviewers (1 staff surgeon, 1 senior resident) interviewed 48 applicants at this station. The 48 participants were also asked to complete the Narcissism Personality Index (NPI-40), which assesses adaptive and maladaptive facets of narcissism. NPI-40 scores were compared to the interview station scoresheet, which included numerical rating scales and a subjective “red flag” system used to identify concerns related to professionalism or personality.

**RESULTS:** Linear regression demonstrated a significant correlation between red flags on the negative feedback station and a high maladaptive proportion of narcissism on the NPI-40 ( $p = 0.02$ ). The numerical interview score and the proportion of maladaptive narcissism score did not reach significance ( $p = 0.05$ ). There was a high inter-

rater reliability between interviewers’ numerical scores ( $r = 0.89$ ) and in determining red flags ( $\sigma = 0.83$ ).

**CONCLUSIONS:** We designed an interview station that successfully identified general surgery residency interviewees displaying high proportions of maladaptive narcissistic traits. Despite an objective scoring process, subjective opinion of interviewers was more valuable in identifying these applicants. Our findings suggest that the written comments of surgeons in interview stations designed to identify applicants with difficulty accepting negative feedback may provide valuable information that is not captured by the numerical scoring process. (J Surg Ed 76:65–76. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

**KEY WORDS:** Narcissism, Residency applicants, Interviews, Medical students, Surgery, Personality

**COMPETENCIES:** Interpersonal and Communication Skills

## INTRODUCTION

The process of selecting medical students for residency programs is imperfect at best. With an abundance of subjective and objective information available on each applicant, identifying the relative importance of each factor and creating a formula that outputs the best suited applicant to a program is a tall order.<sup>1</sup> Inaccurately identifying the top applicants is also of great consequence; selection errors can result in disruption to training programs and can lead to setbacks for residents.<sup>2</sup>

Personal characteristics assessed during interviews have been shown to predict later clinical performance

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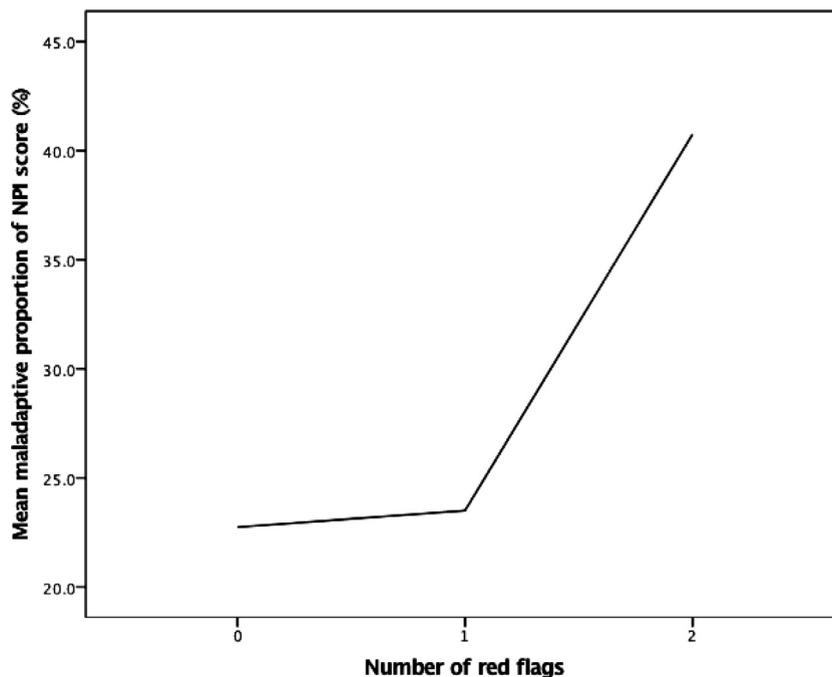
during residency more so than objective measures such as academic record, licensing exam scores, and publications.<sup>3</sup> Furthermore, poor interview performance in terms of characteristics such as attitude, motivation, and interpersonal relationships, has been shown to correlate with later in-training evaluations indicating “cause for concern” among residents.<sup>3</sup> Despite these associations, many residency programs believe their selection processes are inadequate for identifying potential problems.<sup>4</sup>

In an attempt to identify key personality traits that should be avoided in our general surgery residency program, we conducted an informal needs assessment. Through a survey sent to staff and resident surgeons within our division, the most significant personality characteristics both residents and staff described as making a resident difficult to train and therefore should be avoided by our program include arrogance, difficulty accepting criticism, entitlement, and an inability to integrate feedback and teaching. Interestingly, these characteristics share a common theme, sometimes termed “normal narcissism.”<sup>5</sup> Normal narcissism is a personality variable defined by the self-regulatory strategies used to maintain and enhance a positive self-view.<sup>5</sup> Unlike the pathologic Narcissistic Personality Disorder, which requires a resultant impairment in functioning and is therefore relatively uncommon,<sup>6</sup> normal narcissism is nonclinical and relatively common in high-functioning individuals.<sup>5</sup> For the purposes of this study, the term narcissism will be used to describe normal narcissism and is in no way reflective of Narcissistic Personality Disorder (Figure).

While narcissism is sometimes harmful to performance, it can also be advantageous, and thus normal narcissists are often drawn to and thrive in high pressure, high profile professions<sup>7</sup> such as a career in surgery. Furthermore, these individuals typically perform better in situations involving difficult tasks, performing under pressure, or performing in front of an audience,<sup>8</sup> such as an interview. This underscores the importance of assessing narcissistic traits and differentiating the advantageous (adaptive) from the disadvantageous (maladaptive) aspects of narcissism among residency applicants.

The Narcissism Personality Inventory (NPI-40) is one of the most widely used measures of narcissism in normal populations,<sup>5</sup> and was designed to explore the effects and correlates of nonclinical levels of narcissism.<sup>9</sup> The NPI has extensive validity evidence through observer ratings and behavioural measures,<sup>10–14</sup> and has become the standard measure of narcissism in normal populations.<sup>7,15</sup> Among other occupations, the NPI-40 has been used to explore normal narcissism in healthcare professionals, including in surgeons specifically.<sup>16</sup>

Principal-components analysis divides the NPI-40 into various facets, which can be considered adaptive or maladaptive. Some studies have suggested that looking at the various facets separately can provide more meaningful information than does the total score.<sup>11,17,18</sup> Although no universal definition exists, the facets that are generally considered maladaptive include exhibitionism, which is characterized by sensation-seeking and a



**FIGURE.** Group mean of maladaptive percent of NPI score by number of red flags in negative feedback station.

lack of impulse control and exploitativeness, which pertains to hostility and a lack of consideration or tolerance of others, and entitlement which relates to dominance and a need for power.<sup>11,17,18</sup> Previous work on narcissism has concentrated on the scores of various combinations of these 3 facets as a more accurate representation of maladaptive narcissism, and have shown significant positive correlation with impulsive antisociality, machiavellianism, burnout, delinquency, problem behavior, and poor leadership.<sup>11,17,23</sup> As such, the definition of maladaptive narcissism used in this study encompasses the exhibitionism, entitlement, and exploitativeness facets of the NPI-40.

Using the NPI-40 in the residency selection process, however, is not ideal. Despite the growing interest in selection based on personality measures,<sup>24</sup> the use of personality tests in selection has also raised questions with respect to possible unintentional ethical and discriminatory consequences,<sup>25,26</sup> and in some literature has even been advised against.<sup>27</sup> Although other measures used in the current selection process are not bias-free, 1 potential risk of using forced-choice tests in a selection process is their potential to inadvertently bias against certain populations.<sup>25,26</sup> To prevent discrimination issues, it is recommended that results of forced-choice tests are compared to later performance measures and modified to improve their algorithms, or alternatively, use processes that allow for explanation and context with respect to responses,<sup>25</sup> such as interviews. In comparison to the interview process, self-report measures also do not capture the communication skills and nonverbal behaviour of the applicant. Furthermore, unlike interviews, personality tests cannot be changed from year to year, which allows subsequent applicants to anticipate questions and prepare their responses. Thus, the purpose of our study was to determine if an interview station designed to identify maladaptive narcissistic personality traits among applicants to our general surgery residency program would be able to identify applicants with high proportions of maladaptive narcissism.

## METHODS

This prospective study was conducted at the University of Ottawa, Canada. Institutional research ethics board approval was received and written informed consent was obtained from all participants. All 48 fourth-year medical students invited to the University of Ottawa General Surgery Residency Selection Interviews consented to participate in this study. Of note, the participants were recruited and consented by a research assistant not involved in the residency selection process

while waiting for their interview timeslot. It was emphasized to the participants that there was no relationship between the study results and the resident selection process. The only demographic information collected was gender to protect the anonymity of interviewees.

## NPI-40

The NPI-40 is a written personality test consisting of 40 forced-choice items, with a range of scores from 0 to 40 (Appendix 1).<sup>9</sup> All participants were asked to complete a paper-based NPI-40 just prior to their participation in the interview process. The NPI-40 was instead entitled “Personality Quiz” so that participants were not aware that the personality trait of interest was maladaptive narcissism, since this term could potentially be interpreted as derogatory by participants. NPI-40 results were de-identified and assigned a random study ID number.

## Interview Station

Following an initial file review, selected students were invited to the University of Ottawa for a multiple mini-interview (MMI)<sup>28</sup> course made up of 8 stations. Each mini-interview consisted of a 5-minute station that began with a stem on the door, which the applicant read prior to entering the room. Each room consisted of 2 interviewers: 1 staff general surgeon and 1 senior general surgery resident. Interview training was brief, consisting of familiarization with their station’s script and scoresheet, discussion of MMI exam logistics, and the opportunity to ask questions. Interviewers were encouraged to use the full range of the scoresheet and write descriptive and objective comments. Specifically, interviewers were invited to look for objective evidence that a candidate would be especially well-suited for our residency program or displayed behaviours concerning for future problems during training. Interviewers were asked to describe these behaviours and explain why they were concerning to them. Interviewers for the negative feedback station also met with the study investigators to discuss the objective and rationale of the study prior to interview day. With the context provided by the stem, the applicant entered the room and either provided an initial response or completed a task. The interviewers then asked follow-up questions. Once the 5 minutes the applicant exited and proceeded to the next room for the next mini-interview with a new stem and new pair of interviewers. Stations in our MMI included scenario-based stations, “get-to-know-you” stations (e.g., provide an example of a time you were a good team player, or why do you want to pursue general surgery?) and technical skills stations. Each mini-interview station was carefully designed by the residency program selection committee, based on specific characteristics discussed

by the committee that were thought to be important for a career in general surgery (Table 1).

This year, we introduced a scenario-based station designed to detect and assess maladaptive narcissism. In this station, the stem on the door stated that the student would be discussing their midrotation evaluation with their preceptor. Once they entered the room, the interviewers provided the applicant with negative feedback specifically citing deficiencies in knowledge, technical skill, and concerns regarding interprofessional communication as per a script provided to them. The applicant was given a chance to respond, ideally by accepting the feedback, soliciting more information, and coming up with a plan for improvement. The interviewers then acknowledged the applicant's effort, but provided further negative feedback that now on the student's final evaluation, their performance was still significantly below expectations in multiple areas, despite their plan for improvement. The applicant was given another chance to respond to this feedback. The stem, instructions to interviewers, interview script, and questions for this station are included in Appendix 2. Since this station was part of our interview process for resident selection purposes, participating in this station was irrespective of participation in our study.

### Scoring

The scoresheets from each interview station consisted of an anchored numerical rating scale as well as space for written comments (Appendix 3). A red flag was defined as a lapse in professionalism, display of poor personal characteristics, or otherwise serious concern of unsuitability to our residency program. Two study authors blinded to the NPI scores of the participants independently reviewed the comments written by interviewers and coded all comments constituting a 'red flag' based on the a priori definition. For all disagreements between coders, a third independent reviewer served as the tie-

**TABLE 1.** Constructs Assessed in Multiple-Mini Interview (MMI) Stations

MMI Station Number	Construct Assessed
1	Knowledge of a career in general surgery and our institution
2	Accomplishments and/or sources of pride
3	Multitasking and time management
4	Communication and empathy
5	Response to negative feedback
6	Ability to synthesize information and recognize urgency
7	Teamwork and creativity
8	Technical teachability

breaker. Examples of comments that would be considered a red flag include "did not accept any responsibility, do not rank" or "became angry and very defensive."

### Analysis

The NPI-40 was only used for the analysis of our study after the completion of residency matching at our institution. As our primary outcome defined a priori, the relationship between the maladaptive proportion of the NPI-40 score and the interview station described above was tested using a univariate linear regression. The maladaptive proportion of the NPI-40 score was used to emphasize the importance of assessing the weight of the maladaptive narcissism, since other aspects of narcissism can be adaptive. The interview station score was divided into the numerical score and number of red flags assigned. All statistical analysis was conducted using SPSS (version 24) (IBM Corp, Armonk, New York). *p* values < 0.05 were considered significant.

### RESULTS

The mean total score on the NPI-40 was 12.41 (range 3-24) out of a total possible score of 40. The means of all NPI facets are listed in Table 2. The mean score of maladaptive narcissistic traits (defined as the sum of scores of the exhibitionism, exploitativeness, and entitlement facets) was 3.40 (range 0-11). There was no significant difference in the mean total narcissism score or maladaptive percent of NPI-40 score in males versus females (Table 3).

Numerical scores on the interview station ranged from 6 to 15 (mean ± SD = 10.99 ± 2.28), with possible scores ranging from 3 to 15. The inter-rater reliability of interviewers on the numerical scoresheet was *r* = 0.89.

Participants were assigned 0, 1, or 2 red flags on the interview station (mean ± SD = 0.21 ± 0.58) as determined by coders reading the comments written by interviewers. All interviewer comments from the negative feedback station coded as red flags are listed in Table 4. Six applicants (2 female) received red flags; 4 of which

**TABLE 2.** Mean Scores of All NPI Facets

NPI Facet	Mean ± SD (Total Possible Score)
Authority	4.96 ± 1.66 (8)
Self-sufficiency	1.75 ± 1.32 (6)
Superiority	1.50 ± 1.32 (5)
Exhibitionism	0.94 ± 1.31 (7)
Exploitativeness	1.00 ± 0.92 (5)
Vanity	0.81 ± 0.96 (3)
Entitlement	1.46 ± 1.47 (6)

**TABLE 3.** Mean Total NPI-40 Score and Percent of Maladaptive Facets of NPI-40 Score of All Applicants, Males, and Females

Measure	Applicants	Mean ± SD	p Value
Total NPI-40 Score	All (n = 48)	12.41 ± 4.98	0.22
	Males (n = 29)	13.10 ± 5.33	
	Females (n = 19)	11.37 ± 4.36	
Maladaptive percent of NPI-40 score	All (n = 48)	24.3 ± 14.6%	0.34
	Males (n = 29)	26.0 ± 14.1%	
	Females (n = 19)	21.7 ± 15.2%	

**TABLE 4.** Numerical Scores and Comments for Candidates Receiving Red Flags in Negative Feedback Station

Number of Red Flags	Interviewer 1		Interviewer 2	
	Numerical Score*	Comment	Numerical Score*	Comments
1	8	RED FLAG for lack of insight. But she means well. Could foresee issues in training.	8	None
1	8	Too cocky	9.5	None
2	6	Negative outlier!! Hesitant to take responsibility "surprised" *Red flag*	8	Did not say thank you or sorry. Only surprised.
2	10.5	*somewhat cocky* Didn't apologize to nurses.	8.5	Cocky. Asked for help late
2	6	Defended his opinion that he did not have communication problems DID NOT PERFORM WELL ON STATION	5.5	Refused to accept responsibility for issues with nurses
2	8.5	*Was answering well until last follow-up question when I asked him what his approach would be if I failed him on the rotation—he was very aggressive	8.5	Confrontational with follow-up. Mentioned "time management" Reluctant to answer follow-up question.

\*Total possible numerical score is 15.

received red flag comments by both interviewers (i.e., received 2 red flags), and 2 received a red flag comment by 1 interviewer (i.e., received 1 red flag). The inter-rater reliability in determining red flags based on the written comments on the scoresheet was  $\sigma = 0.83$ . Only 2 applicants receiving a red flag on this station also received a red flag in another station. Of note, only 6 red flags were given across all 7 other interview stations.

The mean maladaptive percent of NPI-40 score increased for groups receiving 0, 1, and 2 red flags (Table 5 and Figure 1). Univariate linear regression was used to compare the percent maladaptive of NPI-40 score to scores on the interview station (Table 6). The correlation between the numerical rating score and the percent maladaptive of NPI-40 did not reach significance (mean ± SD = 10.99 ± 2.28,  $b = -0.29$ ,  $p = 0.05$ ). Notably, there was a significant positive correlation between the red flags and the percent maladaptive of NPI-40 score (mean ± SD = 0.21 ± 0.58,  $b = 0.33$ ,  $p = 0.02$ ).

**TABLE 5.** Group Mean of Maladaptive Percent of NPI-40 Score by Number of Red Flags

Number of Red Flags	Number of Participants	Mean Maladaptive % of NPI Score ± SD
0	42	22.7 ± 14.2
1	2	23.5 ± 17.7
2	4	40.8 ± 10.4

**TABLE 6.** Univariate Linear Regression of Maladaptive Percent of NPI Score and Negative Feedback Station Scoring of the Resident Selection Process

Measure	Mean ± SD	Std. Beta	R <sup>2</sup>	p Value
Numerical score	10.99 ± 2.28	-0.29	0.08	0.05
Red flags	0.21 ± 0.58	0.33	0.11	0.02

## DISCUSSION

Our study was a first attempt to determine if an interview station designed for a specific purpose, in this case to identify applicants with high maladaptive narcissistic traits through their response to negative feedback, could differentiate applicants regarding this characteristic. While numerical scoresheets have value in our resident selection process by allowing us to rank candidates, interestingly, the comments of our interviewers, expressed as red flags, demonstrated additional value in detecting responses associated with maladaptive narcissism in this interview station.

The mean total NPI-40 score of 12.41 in our study falls between the results of a 2015 study in the United Kingdom<sup>16</sup> which reported mean scores of 15.0 among staff surgeons compared to just 9.1 among general practitioners. This suggests that students may have been answering honestly, as the previous study reporting scores in physicians were not obtained during an interview or other time with incentive to portray one's ideal self. While regional variation in scores may explain the differences, the mean score in students interviewing for our general surgery residency program may also represent an increase in narcissistic traits throughout surgical residency training through the necessity of developing skills such as leadership, authoritativeness, self-sufficiency, and independence in the operating room. By this hypothesis, medical students with a keen interest in surgery may be more narcissistic than general practitioners, but not yet be as narcissistic as staff surgeons.

More relevant to the resident selection process than the total narcissism score, however, is the proportion of maladaptive narcissistic traits. Original principal-components analysis in previous work identified 7 first-order facets captured in the NPI-40.<sup>11</sup> Of these, exploitativeness, entitlement, and exhibitionism have consistently been considered maladaptive<sup>17</sup> and have shown positive correlation with behavioural measures such as aggression, tenseness, anxiety, neuroticism, poor social adjustment, and poor leadership.<sup>10,11,17,22,23,29</sup> As such, it is suggested to examine NPI at the facet level when examining behavioural outcomes associated with this measure.<sup>17</sup> While limitations with respect to the psychometric properties of the NPI undoubtedly exist, examining correlates of narcissism using facets of the NPI to form subscales as opposed to using the total score improves the utility of the NPI when measuring behavioural outcomes.<sup>11</sup>

Empirical data on the role of maladaptive narcissism in the medical context is scarce, but its existence has been described as 'medical narcissism' and related to lack of disclosure of medical error.<sup>30</sup> Although narcissism can help physicians conduct challenging work, it also highlights difficulty around disclosure of medical errors,

stemming from healthcare professionals' need to preserve self-esteem when their sense of competency is threatened.<sup>31</sup> Narcissistic self-nurturing has also been theorized to impact healthcare providers' ability to provide care.<sup>32</sup> To ensure a focus solely on the maladaptive aspects of narcissism, we examined the proportion of the NPI score represented by maladaptive narcissism. To the best of our knowledge, maladaptive narcissism has not been studied in the selection interview setting before. As expected, our results demonstrate that the proportion of maladaptive narcissistic traits was more relevant to the resident selection process than the total NPI-40 score.

The limitations of self-report measurement (such as through written personality tests like the NPI-40) have led to propositions of abandoning self-report in favour of innovative ways of measuring personality constructs,<sup>33</sup> which we have attempted to do through a simulation encounter in our interview. In the future, discerning maladaptive narcissistic traits in the residency selection process through an interview rather than through the NPI-40 is important for several reasons. First, using the NPI-40 each year would allow subsequent years of students to access the test ahead of time and employ test-taking strategies. On the other hand, an interview station can be altered slightly from year to year to give successive years of applicants a new interview experience. Second, the interview allows for the simultaneous assessment of communication skills and nonverbal behaviour, which cannot be captured by the forced-choice format of the NPI-40.<sup>34</sup> For example, if an applicant were to respond by raising their voice and displaying obvious frustration during the simulated feedback mini-interview station, the interviewers could use the comment section to "red-flag" these candidates. The value of the way in which applicants communicate their response would be lost if the written NPI-40 were used instead of an interview. Third, literature surrounding personality testing for job selection suggests customizing personality measures to those that are clearly job-related and allowing candidates to elaborate on their responses<sup>33</sup> to improve the validity of measurement. Accordingly, we suggest tailoring interview stations to a residency-specific context (i.e., rotation evaluation) and allowing for discussion between interviewer(s) and candidate rather than using a written personality test with dichotomous responses and a general context. Anecdotally, our interviewers reported enjoying the station and found it to elicit a range of responses that is not otherwise seen in more traditional interview stations, although this warrants further feedback from a wider range of interviewers. In future, it would also be useful to gather data on participants' perceptions of the interview station.

Our study is preliminary, has a modest sample size, and is not without limitations. We appreciate that the interview setting is limited by applicants potentially trying to guess the “right” answer to the NPI-40 to portray their ideal self. However, the interview process is likely also susceptible to this phenomenon. Thus it is unknown whether or how this could affect our results, although it has been suggested to be unavoidable and possibly even socially adaptive.<sup>33</sup> We attempted to minimize this effect by renaming the NPI-40 a “Personality Quiz” and not forewarning the candidates they were about to receive negative feedback in the interview station. In addition, the mean scores of the groups receiving 0 and 1 red flag are very similar. This may be the result of the relatively low frequency with which red flags were assigned and even lower frequency with which interviewers disagreed on red flags, or may represent the added value of multiple red flags in the selection process.

Selection interview literature suggests that interviewers have a stereotype of what a good candidate is, and seek to match interviewees with stereotypes.<sup>35</sup> Since our interviewers are staff and resident surgeons, understanding what traits our division considers important to identify in selecting surgery residents through our informal needs assessment was a key first step in attempting to improve our residency selection process. By identifying maladaptive narcissism as our construct of study, we can better understand the stereotypes with which our interviewers seek to match interviewees with. Furthermore, the notion that concerning information is most influential on interviewers<sup>35</sup> is supported by our negative feedback interview station “red-flagging” 6 candidates compared to a total of 6 candidates being red-flagged across all 7 of our other interview stations. However, it should be noted that the interviewers of this station were aware of the objective, which may have inflated the number of red flags generated. While learning about the candidate through personal questions, ethical scenarios, and teamwork stations may be valuable in the assessment of different constructs, the ability of the station design to elicit maladaptive narcissistic traits through candidates’ response to negative feedback provided an increased richness to the data gathered by interviewers. We did not expect the written comments of interviewers to show significant correlation with the maladaptive proportion of the NPI-40 score. This value of the written comments on our scoresheets parallels in-training evaluation reports assessment literature, which demonstrates that written comments improve the quality of resident assessment.<sup>36</sup> The numerical scale used during the interview is designed to guide the interviewers in each station. It was beyond the scope of this

study to evaluate the training of interviewers. This could be a future perspective for continued research on our evaluation process to see if more formal training would lead to improved scoring by interviewers. This study suggests that our numerical scale may need to be amended to better capture the construct being assessed by each station. A formal training session with the interviewers prior to interview day may also help improve the performance of the numerical scale. The insights of interviewers captured through written comments may not always be represented by the numerical scoresheet, but should not be discounted in their value to detect responses associated with high proportions of maladaptive narcissism among residency applicants in the interview setting.

## CONCLUSIONS

Our study reports the successful evaluation of an interview station to identify residency interviewees with high proportions of maladaptive narcissistic traits. This finding suggests that it is possible to design an interview station to specifically identify or assess a particular trait. Our findings also suggest the observations of surgeons in an interview station documented through written comments can identify applicants with difficulty accepting negative feedback and provides valuable information that may not be captured otherwise.

## APPENDIX 1. NPI-40

This inventory consists of a number of pairs of statements with which you may or may not identify.

Consider this example:

- A. I like having authority over people
- B. I don’t mind following orders

Which of these two statements is closer to your own feelings about yourself? If you identify more with “liking to have authority over people” than with “not minding following orders,” then you would choose option A.

You may identify with both A and B. In this case you should choose the statement which seems closer to yourself. Or, if you do not identify with either statement, select the one which is least objectionable or remote. In other words, read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by writing the letter (A or B) in the space provided to the right of each item. Please do not skip any items.

1. A. I have a natural talent for influencing people.  
B. I am not good at influencing people. 1. \_\_\_\_\_
2. A. Modesty doesn't become me.  
B. I am essentially a modest person. 2. \_\_\_\_\_
3. A. I would do almost anything on a dare.  
B. I tend to be a fairly cautious person. 3. \_\_\_\_\_
4. A. When people compliment me I sometimes get embarrassed.  
B. I know that I am good because everybody keeps telling me so. 4. \_\_\_\_\_
5. A. The thought of ruling the world frightens the hell out of me.  
B. If I ruled the world it would be a better place. 5. \_\_\_\_\_
6. A. I can usually talk my way out of anything.  
B. I try to accept the consequences of my behavior. 6. \_\_\_\_\_
7. A. I prefer to blend in with the crowd.  
B. I like to be the center of attention. 7. \_\_\_\_\_
8. A. I will be a success.  
B. I am not too concerned about success. 8. \_\_\_\_\_
9. A. I am no better or worse than most people.  
B. I think I am a special person. 9. \_\_\_\_\_
10. A. I am not sure if I would make a good leader.  
B. I see myself as a good leader. 10. \_\_\_\_\_
11. A. I am assertive.  
B. I wish I were more assertive. 11. \_\_\_\_\_
12. A. I like to have authority over other people.  
B. I don't mind following orders. 12. \_\_\_\_\_
13. A. I find it easy to manipulate people.  
B. I don't like it when I find myself manipulating people. 13. \_\_\_\_\_
14. A. I insist upon getting the respect that is due me.  
B. I usually get the respect that I deserve. 14. \_\_\_\_\_
15. A. I don't particularly like to show off my body.  
B. I like to show off my body. 15. \_\_\_\_\_
16. A. I can read people like a book.  
B. People are sometimes hard to understand. 16. \_\_\_\_\_
17. A. If I feel competent I am willing to take responsibility for making decisions.  
B. I like to take responsibility for making decisions. 17. \_\_\_\_\_
18. A. I just want to be reasonably happy.  
B. I want to amount to something in the eyes of the world. 18. \_\_\_\_\_
19. A. My body is nothing special.  
B. I like to look at my body. 19. \_\_\_\_\_
20. A. I try not to be a show off.  
B. I will usually show off if I get the chance. 20. \_\_\_\_\_
21. A. I always know what I am doing.  
B. Sometimes I am not sure of what I am doing. 21. \_\_\_\_\_
22. A. I sometimes depend on people to get things done.  
B. I rarely depend on anyone else to get things done. 22. \_\_\_\_\_
23. A. Sometimes I tell good stories.  
B. Everybody likes to hear my stories. 23. \_\_\_\_\_

(continued)

24. A. I expect a great deal from other people.  
B. I like to do things for other people. 24. \_\_\_\_\_
25. A. I will never be satisfied until I get all that I deserve.  
B. I take my satisfactions as they come. 25. \_\_\_\_\_
26. A. Compliments embarrass me.  
B. I like to be complimented. 26. \_\_\_\_\_
27. A. I have a strong will to power.  
B. Power for its own sake doesn't interest me. 27. \_\_\_\_\_
28. A. I don't care about new fads and fashions.  
B. I like to start new fads and fashions. 28. \_\_\_\_\_
29. A. I like to look at myself in the mirror.  
B. I am not particularly interested in looking at myself in the mirror. 29. \_\_\_\_\_
30. A. I really like to be the center of attention.  
B. It makes me uncomfortable to be the center of attention. 30. \_\_\_\_\_
31. A. I can live my life in any way I want to.  
B. People can't always live their lives in terms of what they want. 31. \_\_\_\_\_
32. A. Being an authority doesn't mean that much to me.  
B. People always seem to recognize my authority. 32. \_\_\_\_\_
33. A. I would prefer to be a leader.  
B. It makes little difference to me whether I am a leader or not. 33. \_\_\_\_\_
34. A. I am going to be a great person.  
B. I hope I am going to be successful. 34. \_\_\_\_\_
35. A. People sometimes believe what I tell them.  
B. I can make anybody believe anything I want them to. 35. \_\_\_\_\_
36. A. I am a born leader.  
B. Leadership is a quality that takes a long time to develop. 36. \_\_\_\_\_
37. A. I wish somebody would someday write my biography.  
B. I don't like people to pry into my life for any reason. 37. \_\_\_\_\_
38. A. I get upset when people don't notice how I look when I go out in public.  
B. I don't mind blending into the crowd when I go out in public. 38. \_\_\_\_\_
39. A. I am more capable than other people.  
B. There is a lot that I can learn from other people. 39. \_\_\_\_\_
40. A. I am much like everybody else.  
B. I am an extraordinary person. 40. \_\_\_\_\_

**SCORING KEY:**

Assign 1 point for each response that matches the key:

1, 2 and 3: A

4, 5: B

6: A

7: B

8: A

9, 10: B

11, 12, 13, 14: A

15: B

16: A

17, 18, 19, 20: B

21: A  
22, 23: B  
24, 25: A  
26: B  
27: A  
28: B  
29, 30, 31: A  
32: B  
33, 34: A  
35: B  
36, 37, 38, 39: A  
40: B

The 7 component traits by question:

- Authority: 1, 8, 10, 11, 12, 32, 33, 36
- Self-sufficiency: 17, 21, 22, 31, 34, 39
- Superiority: 4, 9, 26, 37, 40
- Exhibitionism: 2, 3, 7, 20, 28, 30, 38
- Exploitativeness: 6, 13, 16, 23, 35
- Vanity: 15, 19, 29
- Entitlement: 5, 14, 18, 24, 25, 27

## APPENDIX 2. NEGATIVE FEEDBACK INTERVIEW STATION

**Interview stem on door:** You are a PGY1 in general surgery and you have just completed 4 blocks of off-service rotations. So far your evaluations have all stated that you are performing very well and there are no concerns at all. You start block 5, in general surgery, and things are going well as per usual. You are getting along well with your senior and staff and enjoying your time. You are now meeting with both of them for your midrotation evaluation.

**Instructions for interviewers:** Please act this out as an actual mid elective evaluation!!! Staff is to run the

evaluation, and senior resident joins in only if asked by the interviewee for their opinion on performance (if so, agree with staff) or if the interviewee asks the senior resident for help and/or ways to improve.

**In the room:** Staff explains that while they have enjoyed working together, both are concerned with the student's performance over the past week. He and/or she is overall not at the level they would expect of a PGY1. Specifically, his and/or her knowledge is weak when asked basic general surgery questions, and much behind that of their peers. The staff and senior resident are also concerned with the student's technical skill and notice the student has been rough with tissues and has demonstrated some unsafe movements when opening the abdomen. Finally, a few of the nurses have voiced concerns with respect to the tone of voice the student sometimes uses when speaking to them. Overall, the staff and senior feel as though the student is performing at the medical student level.

Ask the student an open-ended question such as "what are your thoughts?". Allow the student to speak freely, but if needed, can prompt the student with questions such as "why do you think you received this evaluation?" or "what do you think can be done about this?" Try not to imply that the responsibility is on either the student or the staff and/or senior as you want to see if the student accepts responsibility.

**Follow-up questions:** (may be asked by staff or senior)

Once the student has presented a plan for the remaining time on their rotation, please say "you carried out your plan, but when meeting again for your final evaluation, you're told that while they can see you have been working hard, no significant improvement has been appreciated, and overall you are still performing below your expected level. What are your thoughts now?"

## APPENDIX 3. INTERVIEW STATION SCORESHEET

Group #: \_\_\_\_\_ Applicant: \_\_\_\_\_

Interviewer: \_\_\_\_\_

Please rate the following aspects of this applicant's performance on this station as you would expect of a PGY1 on their first day of residency.

Please score the **content** of the applicant's response on this station:

1 | | | 3 | | | 5

Either accepts responsibility for the problem but cannot formulate any plan for improvement OR does not accept responsibility and suggests the evaluation may be wrong or due to circumstances beyond his/her control.

Accepts responsibility for the problem, with minimal further inquiry into deficiencies. Some suggestions on how to improve, with either a vague plan, single method or resource, or addresses just 1 deficiency.

Accepts responsibility for the problem and solicits more information about deficiencies. Describes an in-depth plan of improvement that addresses multiple methods and resources for all deficiencies. Asks for help when told plan does not result in improvement.

Please score the applicant's **communication** on this station:

1 | | | 3 | | | 5

Poor non-verbal communication (ex. eye contact, tone of voice, body language) AND verbal communication (ex. choice of words, organization of thought)

Some elements of excellent non-verbal communication and/or verbal communication are present, but an equal number of elements are poor.

Excellent non-verbal communication (ex. eye contact, tone of voice, body language) AND verbal communication (ex. choice of words, organization of thought)

Based on this station, do you want to work with this applicant?

1 | | | 3 | | | 5

Do not rank this applicant. I would rather no resident rather than to work with this person.

I am indifferent as to whether this applicant becomes a resident in our program. He/she did fine, and I would not mind working with them, but I also wouldn't be upset if they were not in our program.

Definitely rank this applicant. His/her performance in this station was outstanding and our program would be remiss if he/she was not in it.

Do you have any concerns regarding ethics or professionalism? Yes No  
If yes, please explain:

\_\_\_\_\_

Do you have any other concerns that have not been captured in this evaluation? Yes No  
If yes, please explain:

\_\_\_\_\_

Other comments:

\_\_\_\_\_

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