



# Applicant perceptions of new selection systems are a function of their performance in the selection procedure<sup>☆</sup>



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## ABSTRACT

**Introduction:** Screening practices for selecting surgery trainees have been criticized for subjectivity, inefficiency, and inability to predict performance. This study explored applicant perceptions to an untraditional selection process.

**Methods:** Fellowship applicants completed an online assessment containing 26 situational judgment test (SJT) items and a 108-item personality profile. High-performing candidates participated in on-site structured interviews and skills testing. Upon completion of all interviews, but before match results were available, an anonymous, online survey was sent to all applicants. The survey asked about perceptions of the selection system along dimensions of procedural justice theory on a 1 (strongly disagree) to 5 (strongly agree) scale.

**Results:** Twenty-one of 51 applicants completed the survey. Those invited for an interview (N = 12) had more favorable perceptions about communication ( $3.50 \pm 1.38$  versus  $2.00 \pm 0.82$ ,  $p < 0.05$ ), opportunity to perform ( $3.33 \pm 1.56$  versus  $1.29 \pm 0.49$ ,  $p < 0.01$ ), fairness ( $4.50 \pm 0.80$  versus  $3.43 \pm 1.40$ ,  $p < 0.05$ ) and gaining more insight ( $4.25 \pm 1.22$  versus  $2.29 \pm 1.60$ ,  $p < 0.01$ ) compared to applicants not invited. Content ( $4.21 \pm 0.86$ ) and consistency ( $4.79 \pm 0.42$ ) means were similar.

**Conclusions:** These results suggest that applicant perceptions are directly related to how well they perform in the selection procedure.

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## Introduction

Traditional screening of applicants to surgical training positions in the United States entails review of in training examinations, licensing examinations, letters of recommendation, and unstructured interviews.<sup>1</sup> Unfortunately, this screening process has received increased criticism due to the fact that these data are highly subjective, create substantial administrative burdens for decision makers, and have received mixed support in their ability to predict training performance.<sup>2–4</sup> For these reasons, program

directors are increasingly exploring how the incorporation of novel screening tools can provide them with more objective data to inform decisions about applicant fit into their program.<sup>5–9</sup>

As program leaders continue to explore innovative processes for increasing the efficiency and validity of selection systems, they must be prepared to identify how applicants will respond. Applicants are an important stakeholder in the hiring process, and their reactions are important for a number of reasons.<sup>10,11</sup> For example, applicants who find aspects of a selection system invasive or overly burdensome may view the program as less attractive, thereby leading them to rank the program unfavorably or withdrawal from the application process entirely. Additionally, candidates with negative reactions to a selection experience might dissuade other potential applicants from applying. Both of these scenarios can result in programs losing top candidates. Given current rates of remediation and attrition in surgical training,<sup>2,12,13</sup> programs cannot afford to lose high-potential applicants. Unfortunately, there is a paucity of data within the surgical education literature that examine selection procedures from the applicants' viewpoint.

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The goal of this study was to fill this gap by exploring how applicants would respond to new screening tools and methodologies during the selection process using procedural justice theory.<sup>14</sup> The procedural justice framework highlights that the extent to which applicants believe a selection system is fair is dependent upon the extent to which it complies with certain rules, and that this perceived fairness, in turn, impacts important selection outcomes, such as withdrawal from the selection process, intentions to apply to the program in the future, and litigation intentions.<sup>14–16</sup> We examined these perceptions among applicants who participated in an innovative, multi-method screening process to a surgery training program.

## Methods

After submitting an application through the Fellowship Council website, applicants to a single advanced surgical fellowship in the United States were emailed a confirmation of receipt and a follow-up packet from the program. The follow-up email to the applicant included a letter from the Program Directors, additional information about the program, and a description of next steps. Within this letter, participants were asked to complete an online assessment containing 26 situational judgment test (SJT) items and a 108-item personality profile as part of their application package. Applicants were instructed that the assessment would take less than an hour, required a unique login and password provided to them, and should be completed within the next 7 days. Applicants with scores above the pre-defined threshold on the two assessments were invited to an on-site interview in which structured interviews<sup>5</sup> and laparoscopic skills testing were conducted. Description of the development of this multi-method screening process and the specific assessments used can be found elsewhere.<sup>9</sup>

After all on-site assessments (structured interview, skills test) were conducted and the Fellowship Council rank lists deadline had passed, but before results of the match were available, an anonymous, online survey was sent to all applicants inquiring about their experiences with the new selection system. The survey was based on best practices in developing fair selection systems.<sup>14</sup> Specifically, participants were asked about their perceptions of job relevance, communication, opportunity to perform, consistency, fairness, and ability to gain additional insight about the position requirements pertaining to each assessment phase (online, interview, skills test) in which they participated on a 1 (strongly disagree) to 5 (strongly agree) scale.

The survey included branched logic, such that applicants only completed items for assessment phases in which they participated. For example, if applicants were not invited for an on-site interview, they only completed the portion of the survey investigating their perceptions of the online assessment tool (SJT and personality profile). If applicants were invited and attended the on-site interview, they provided their perceptions of the process as it pertained to the online assessment, on-site interviews with faculty, and on-site laparoscopic skills testing.

Basic descriptives, frequencies, and independent samples t-tests were used to analyze these data with SPSS version 24.0 (IBM; Chicago, IL).

## Results

Twenty-one of 50 (42%) eligible applicants completed the survey. Frequencies of “agree” or “strongly agree,” as well as means and standard deviations, for each item by phase are provided in Table 1.

As shown, regardless of being invited for an on-site interview or not, all applicants had similarly high perceptions of the relevance of

content (92% and 78% for invited and not invited groups, respectively) and consistency of administration (both groups 100%) for the online assessment. However, differences between groups emerged for the other items pertaining to the online assessment. Specifically, applicants invited for an on-site interview ( $N = 12$ ) had more favorable perceptions about communication of the assessment process (50% versus 0%,  $p < 0.05$ ), the ability to demonstrate their skills and abilities through the assessment platform (42% versus 0%,  $p < 0.01$ ), fair treatment during the assessment process (83% versus 44%,  $p < 0.05$ ) and gaining additional insight into being a fellow in the program (83% versus 33%,  $p < 0.01$ ).

The majority of fellows who attended the interviews ( $N = 6$ ; 50% of all who attended) agreed it was more organized (83%), provided more relevant information (83%), had more organized faculty (83%), incorporated more relevant questions (67%), provided more information about the position (67%), included faculty who were more polished (83%), and allowed applicants to better determine their “fit” compared to other programs (83%). The majority of fellows agreed the skills testing was relevant (83%), consistent (100%), fair (100%), and a positive experience (67%). However, only a third of the applicants felt they were provided with enough information about the skills testing assessment in advance. Additionally, only half of the applicants believed that the skills testing assessment allowed them to demonstrate their skills and abilities.

## Discussion

Incorporation of novel screening tools into the trainee selection process can help program leaders obtain critical information about candidates’ knowledge, skills, and potential fit, while also providing applicants with opportunities to demonstrate their qualifications and learn more about the program. However, institutions may be hesitant to include unique or customized screening tools into the selection process until they are able to fully understand how applicants may respond. The goal of our study was to explore applicant experiences after participating in a comprehensive, multi-method screening process for an advanced surgery fellowship.

Our findings suggest that the majority of applicants who were asked to complete an online screening assessment consisting of a situational judgment test and personality profile had favorable perceptions of that process. The majority of applicants agreed that the content was relevant and was administered in a fair and consistent manner. Importantly, the majority of applicants also agreed that the process provided them with additional insight into what it would be like to be a fellow in the program. This finding is undoubtedly a result of including a situational judgment test developed specifically for the program, which included hypothetical, but realistic scenarios that a fellow in the program would encounter on a frequent basis. Inclusion of this assessment tool early in the applicant screening process not only allowed the program to get information about key competencies and behaviors that it values, but also allowed the applicants to obtain a realistic preview of the fellowship position.

Our results also demonstrated that applicants’ perceptions of a new selection system are largely a function of how well they did in the selection procedure. Those who were not invited to participate further displayed lower perceptions of communication, opportunity to perform, fairness, and ability to gain insight from the online assessment process. They agreed with their counterparts, however, that the online assessment included relevant content and was consistently administered. As applicants with negative reactions to a selection experience might dissuade other potential applicants from applying and might reconsider future plans to apply to the program, programs may want to develop additional venues for providing courteous and thoughtful communication to those not

**Table 1**  
Applicant perceptions of assessment phases.

| Online Assessment              |                                                                                   |                                                                                             |                                                                     |                                                                                         |                                                                                                           |                                                                                                                     |                                                                                      |
|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                | The content of the assessment was clearly related to a fellow's role.             | I was provided with information in advance about what the assessment process would be like. | I could really show my skills and abilities through the assessment. | I believe the assessment was administered to all applicants in the same way.            | I was treated honestly and fairly during the assessment process                                           | From this process, I was able to gain additional insight into what it would be like to be a fellow in this program. |                                                                                      |
| All Applicants                 | 84%(4.21 ± 0.86)                                                                  | 32%(2.95 ± 1.39)                                                                            | 26%(2.58 ± 1.61)                                                    | 100%(4.79 ± 0.42)                                                                       | 68%(4.11 ± 1.15)                                                                                          | 63%(3.53 ± 1.65)                                                                                                    |                                                                                      |
| Invited for Interview (N = 12) | 92%(4.42 ± 0.90)                                                                  | 50%(3.50 ± 1.38)                                                                            | 42%(3.33 ± 1.56)                                                    | 100%(4.92 ± 0.29)                                                                       | 83%(4.50 ± 0.80)                                                                                          | 83%(4.25 ± 1.22)                                                                                                    |                                                                                      |
| Not Invited (N = 9)            | 78%(3.86 ± 0.69)                                                                  | 0%(2.00 ± 0.82)                                                                             | 0%(1.29 ± 0.49)                                                     | 100%(4.57 ± 0.54)                                                                       | 44%(3.43 ± 1.40)                                                                                          | 33%(2.29 ± 1.60)                                                                                                    |                                                                                      |
| Difference                     | ns                                                                                | p < 0.05                                                                                    | p < 0.05                                                            | ns                                                                                      | p < 0.05                                                                                                  | p < 0.05                                                                                                            |                                                                                      |
| Interview                      |                                                                                   |                                                                                             |                                                                     |                                                                                         |                                                                                                           |                                                                                                                     |                                                                                      |
|                                | Compared to other programs, the logistics of interview day seemed more organized. | Compared to other programs, the fellow-related content seemed more relevant.                | Compared to other programs, faculty seemed more organized.          | Compared to other programs, faculty asked more about things relevant to being a fellow. | Compared to other programs, faculty provided me with more information about the requirements of a fellow. | Compared to other programs, faculty seemed more polished during the interview process.                              | Compared to other programs, I was able to better determine my “fit” at this program. |
| N = 6 (50%)                    | 83%(4.50 ± 0.84)                                                                  | 83%(4.17 ± 1.17)                                                                            | 83%(4.50 ± 0.84)                                                    | 67%(4.17 ± 1.17)                                                                        | 67%(4.33 ± 1.03)                                                                                          | 83%(4.50 ± 0.84)                                                                                                    | 83%(4.67 ± 0.82)                                                                     |
| Technical Skills Assessment    |                                                                                   |                                                                                             |                                                                     |                                                                                         |                                                                                                           |                                                                                                                     |                                                                                      |
|                                | The content of the assessment was clearly related to a fellow's role.             | I was provided with information in advance about what the assessment process would be like. | I could really show my skills and abilities through the assessment. | I believe the assessment was administered to all applicants in the same way.            | I was treated honestly and fairly during the assessment process                                           | I felt the skills testing portion was a positive aspect of the selection process.                                   |                                                                                      |
| N = 6 (50%)                    | 83%(4.00 ± 1.55)                                                                  | 33%(2.83 ± 1.84)                                                                            | 50%(3.33 ± 1.21)                                                    | 100%(4.83 ± 0.41)                                                                       | 100%(4.83 ± 0.41)                                                                                         | 67%(3.50 ± 1.23)                                                                                                    |                                                                                      |

Note: Percentages reflect applicant responses for "agree" or "strongly agree" and do not capture "neutral" responses. Values in parentheses reflect mean and standard deviation.

selected for additional consideration. While this fellowship program did not provide any more or less feedback about interview selection decisions than it has traditionally done, the online assessment process seems to create a psychological contract that requires providing more detailed feedback to applicants not chosen to interview about how they performed on the tests and why they are not a candidate for next steps in the selection process.

Applicants who were invited for an interview had favorable perceptions of the online assessment and believed the on-site interviews were conducted better than other programs. This latter finding is undoubtedly a result of programmatic efforts to implement structured interviews into the screening process.<sup>5</sup> Given that the item stem for the seven items related to interview quality all began with, “Compared to other programs,” and that these on-site interviews were conducted late in the season (i.e., April), these findings suggest that applicants notice efforts to organize and more thoughtfully conduct on-site interviews.

Finally, while faculty felt strongly that skills testing was a useful screening tool at the fellowship level, this aspect of the screening process was received less favorably among candidates. Although the majority of applicants agreed that skills testing was relevant, consistently administered, fairly conducted, and a positive aspect of the selection process, only half felt that the skills test allowed them to demonstrate their skills and abilities. This latter finding may be a result of the one skill specifically evaluated (laparoscopy) or that applicants felt the assessment platform did not capture all relevant skills and abilities relevant to being an advanced surgery fellow. Additionally, only a third of applicants indicated that they were provided with enough information about the skills testing in advance. Although candidates invited for an on-site interview were sent a schedule of events for the day, which included a skills testing block, they apparently did not understand what the session entailed and would have liked more information on what skills would be tested, why, and how their performance would be used in their overall evaluation. Thus, programs implementing novel selection methodologies may be wise to err on the side of “over communication” for applicants, to ensure a pleasant candidate experience.

Although these methods and results align with evidence on applicant perceptions from other industries,<sup>14–16</sup> there are a number of limitations worth acknowledging. First, these data represent experiences from a little less than half of applicants from a single fellowship program at one institution. As no other data on this topic exists within the surgical education literature, we have no benchmarks from which to compare our data. As such, we have no way to know how our outcomes compare to applicant perceptions of the traditional selection system or to know what the baseline perceptions were at this institution prior to the intervention. Future work should examine applicant reactions to both traditional and novel screening methodologies across programs and institutions.

## Conclusion

Our findings suggest that innovative selection techniques can be well-received by applicants, but that program leaders should be aware that applicant perceptions will be a function of how well they perform in the selection system itself. To optimize applicant perceptions, programs should ensure that all screening methods are related to the position, allow applicants an opportunity to demonstrate their knowledge and skills, and are fairly administered. Communication about all steps of the process is also critical to ensure a positive applicant experience.

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