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#### Utility of Recommendation Letters and Correlation with Specific Residency Applicant Qualities

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# **Residency Applicant Qualities**

# Utility of Recommendation Letters and Correlation with Specific Joseph E. Patruno, MD; Amanda Flicker, MD; Craig Koller, MEd, MBA; Amy Smith, PhD; Hubert Huang, MS, MEd; Taylor Weilnau

## Abstract

### Object

Each year, residency programs seek to recruit medical students with certain qualities for residency positions. The purpose of our study was to study letters of recommendations (LOR) and vocabulary that correlated with desired qualities of empathy, teamwork, and self-knowledge. This data was used to create a unique Quality quotient (Qq), for each parameter, which was then compared with perception of the applicants during the interview process.

#### Methods

Our study is an observational analytical retrospective cohort study of 67 students who were interviewed during the 2012-2013 recruitment season at a single OBGYN residency program. Each applicant underwent interviews with 8 separate interviewers. At the completion of each interaction interviewers rated the student using a standard questionnaire based on a 9-point Likert scale, focusing on the qualities of empathy, dedication to teamwork, and students' perceived selfknowledge. They also assigned the student with a global rating or rank. Letters of recommendation were then dissected for "key" words that correlated with the aforementioned qualities (i.e. "Compassionate" = Empathy). A Qq was created (Number of "key" words/ Total lines in LORs) for each applicant for each quality. This Qq was compared to interviewer perception of the qualities, as well as applicant's overall ranking. Evaluation of the linear relationship between the Qqs and interviewer rating and rankings was measured using Pearson's correlation.

#### Results

For each applicant 3-5 letters of recommendation were analyzed. The number of words correlating with each quality varied per letter; Empathy (1-12), Teamwork (2-16), and Self-knowledge (3-22). Total number of lines in the letters was also quite variable (32-134). Qqs calculated for team work correlated positively with perceived impression of these qualities of the applicants based on the interview process and ratings, although the correlation was not significant (r=0.237, p=0.53). The correlation for the quality of self-knowledge and empathy was negligible. Qqs for all qualities were found to be weak predictors of the overall rank of each applicant (Empathy, r=0.019, p=0.877; Teamwork, r=0.185, p=0.134; Self-knowledge, r=0.114, p=0.359).

### Conclusions

LORs, based on our data, are not strongly predictive of evaluator impression of resident applicants, during the interview process nor student ranking. We have created a standard quotient which may, if combined with or if assessed in conjunction with other pertinent data, may eventually serve as a predictor of student impression and perhaps future resident performance.

Introduction

- Each year, residency programs seek to recruit medical students with certain qualities
- The purpose of our study was to study letters of recommendations (LOR) and vocabulary that correlated with qualities we deemed critical in applicants including:
  - Teamwork

- Empathy

Self-Knowledge

• This data was used to create a unique Quality quotient (Qq), for each parameter, which was then compared with perception of these qualities in applicants during the interview

# Methods

- Observational retrospective cohort study of 67 students who were interviewed during the 2012-2013 recruitment season at a single **OBGYN** residency program
- Applicants underwent interviews with 8 separate interviewers and were rated using a questionnaire based on a 9-point Likert scale, focusing on the qualities of empathy, dedication to teamwork, and self-knowledge (Figure 1)
- Letters of recommendation (LOR) were then dissected for associated words that correlated with the aforementioned qualities (Table 1)
- A Quality Quotient (Qq) was created (Number of quality words/ Total lines in LORs) for each applicant for each quality.
- This Qq was compared to interviewer perception of the qualities, as well as, applicant's overall ranking to see if it was predictive of how they were rated.
- Evaluation of the linear relationship between the Qqs and interviewer rating and rankings was measured using Pearson correlation.

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#### Words Associated with "Empathy" • Empathetic Compassionate

- Caring
- Rapport
- Connection

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#### Figure 1.

nt Candidate Assessment Form	Empathy	y, To	ean	nwe	ork	, Se	elf l	knc	wle	dge Foc		
Rating 1 to 9 (1=strongly disagree, 5 = neutral, 9 = strongly agree, na = no assessment)												
	<u>Stro</u>	ngly	Disa	<u>gree</u>		Neut	tral		Strong	gly Agree		
a candidate who will have no difficulty rating with others?	1	2	3	4	5	6	7	8	9	na		
a candidate who will have <b>good judgment</b> now when to seek assistance?	1	2	3	4	5	6	7	8	9	na		
a candidate who will be able to really ings from <b>someone else's perspective</b>	1	2	3	4	5	6	7	8	9	na		
a candidate who will <b>encourage others</b> tients, students, etc) to participate.	1	2	3	4	5	6	7	8	9	na		
a candidate who seems to <b>know themselves</b> becifically their strengths and limitations	1	2	3	4	5	6	7	8	9	na		
a candidate who will relate well ople of <b>diverse backgrounds</b> and beliefs?	1	2	3	4	5	6	7	8	9	na		
a candidate who take a <b>team approach</b> ork towards collective goals?	1	2	3	4	5	6	7	8	9	na		
a candidate who displays confidence?	1	2	3	4	5	6	7	8	9	na		
a candidate who will <b>be alert to others</b> <b>s</b> and take interest in their concerns?	1	2	3	4	5	6	7	8	9	na		
s a candidate who has a <b>sense of humor</b> ? themselves?	1	2	3	4	5	6	7	8	9	na		
s a candidate who has a good grasp at it takes to be an effective OBGYN nt and physician?	1	2	3	4	5	6	7	8	9	na		

#### **Quality Words and Phrases**

Words Associated with "Team Work"

- Team-player
- Dependable (comes early and leaves late)
- Hard working • Ethical
- Energetic
- Positive
- Responsive
- Words Associated with "Self Knowledge" Professional Mature Knowledgeable • "We want her" Motivated Composed "One of the best" "Will be excellent **OBGYN**"

- quite variable (32-134).
- Qqs calculated for team wo correlated positively with pe impression of these qualitie applicants based on the inte process and ratings, althou correlation was not signification (r=0.237, p=0.53)
- The correlation for the qual self-knowledge and empath negligible.
- p=0.359).

A PASSION FOR BETTER MEDICINE."

# Results

 For each applicant 3-5 letters of recommendation were analyzed The number of words correlating with each quality varied per letter; Empathy (1-12), Teamwork (2-16), and Self-knowledge (3-22). total number of lines in the letters was also

ork berceived ies of the terview ugh the cant	Table 1: Correlation of LOR quality quotient and overall ranking									
		Quality Quotient	Correlation Coeficient	p-value						
	Qqs Predictors	Overall	0.157	0.204						
		Empathy	0.019	0.877						
		Teamwork	0.185	0.134						
		Self-Knowledge	0.114	0.359						
thy was										

Qqs for all qualities were found to be weak predictors of the overall rank of each applicant (Empathy, r=0.019, p=0.877; Teamwork, r=0.185, p=0.134; Self-knowledge, r=0.114,

# Conclusions

 LORs, based on our data, are not strongly predictive of evaluator impression of resident applicants relating to the qualities of empathy, teamwork, and self-knowledge

In our study LORs also did not positively influence student ranking.

 We have created a standard quotient which may, if combined with or if assessed in conjunction with other pertinent data, eventually serve as a predictor of student impression and perhaps future resident performance.

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