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Zanetti, Mary L.; Alper, Eric J.; Gammon, Wendy L.; Pugnaire, Michele P.; Carlin, Michele M.; Purwono, Urip; Barrett, Susan V.; and Sefton, Laura A., "Pre/Post Comparison of Medical Students' Self-Reported Competence Ratings for Content and Skill Areas Included in an End of Third Year Assessment" (2004). *Office of Institutional Research, Evaluation, and Assessment Publications and Presentations.* Paper 11.
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Pre/Post Comparison of Medical Students' Self-Reported Competence Ratings for Content and Skill Areas Included in an End of Third Year Assessment

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BACKGROUND

The End of Third Year Assessment (EOTYA) evaluates medical students using multiple Objective Structured Clinical Examinations (OSCE) and offers comprehensive feedback to students on their content knowledge and skills. This study measures the change in students' perceived level of competence before and after completing the EOTYA.

GOAL

To develop additional summative feedback for third year medical students emanating from the EOTYA and a newly developed self-assessment tool.

METHOD

A self-reported evaluation instrument using a 5-point Likert scale was developed for this study. A comparison of students' pre- and post-competence ratings for each of six EOTYA content areas (family medicine, medicine, obstetrics-gynecology, pediatrics, psychiatry, and surgery) and each of six EOTYA skills areas (history taking, physical examination, interviewing, professionalism, counseling and education, and problem solving) was conducted. The analysis compared the pre- and post- difference in the percentage of "positive" ratings using an approximation to the binomial distribution. In addition, items were clustered into content and skill areas, then a paired t-test analysis compared pre- and post- clusters for statistically significant differences. A subsequent correlation analysis was conducted between the post-competence ratings and actual student scores in selected EOTYA skill and content areas.

RESULTS

A total of ninety-one students (Class of 2004) completed both the pre- and post-questionnaires. The initial paired t-test comparison indicated a statistically significant difference between the pre- and post- items, which were clustered into content and skill areas (see Table 1). The results of the pre/post comparison indicated a statistically significant shift in the proportion of "positive" student ratings in three content areas (obstetrics/gynecology, psychiatry, and surgery; z=3.58-4.37, p<.05) and in one skill area (counseling/patient education, z=2.31, p<.05). Tables 2 and 3 and Figures 1 and 2 outlines these changes. Table 4 contains the correlation analysis between the post-competence ratings and student performance in selected content and skill areas, which reflected a significant positive association.

Table 1: Paired Samples Test

		Mean (SD)	N	Std. Mean	Paired Differences: Mean (SD)	Std. Error Mean	95% CI of the Difference		t	df	Sig. (2-tailed)
Pair 1	Post Content	3.6978 (.449)	91	.047	.2436 (.459)	.048	.148	.339	5.062	90	.000
	Pre Content	3.4542 (.458)	91	.048							
Pair 2	Post Skill	3.9872 (.481)	91	.051	.0733 (.326)	.034	.005	.141	2.143	90	.035
	Pre Skill	3.9139 (.460)	91	.048							

Table 2: Please rate your level of competence in the following content areas:

CONTENT Items: Percent Responses

	Not at all competent	Minimally competent	Somewhat competent	Competent	Very competent
Pre-Family Medicine			31%	60%	9%
Post-Family Medicine		1%	38%	51%	10%
Pre-Medicine		2%	36%	58%	3%
Post-Medicine		2%	34%	55%	9%
Pre-Ob/Gyn	2%	13%	56%	26%	2%
Post-Ob/Gyn		2%	38%	52%	8%
Pre-Pediatrics	1%	7%	42%	48%	2%
Post-Pediatrics		8%	48%	36%	8%
Pre-Pyschiatry		7%	51%	41%	2%
Post-Pyschiatry		2%	29%	57%	12%
Pre-Surgery	2%	7%	48%	38%	4%
Post-Surgery		1%	24%	57%	18%

Table 3: Please rate your level of competence in the following skill areas:

SKILL Items: Percent Responses

	Minimally competent	Somewhat competent	Competent	Very competent
Pre-History taking		10%	67%	23%
Post-History taking		12%	66%	22%
Pre-Physical exam	2%	38%	55%	4%
Post-Physical exam		34%	59%	7%
Pre-Interviewing		9%	66%	25%
Post-Interviewing		12%	60%	27%
Pre-Professionalism		7%	51%	43%
Post-Professionalism		7%	45%	48%
Pre-Counseling and education	3%	42%	49%	5%
Post-Counseling and education	1%	27%	60%	11%
Pre-Problem solving	1%	41%	52%	7%
Post-Problem solving	1%	38%	48%	12%

Table 4

Spearman's Rho Correlations	
Post-History Taking Score w/ Surgery History Score	.248*
Post-Interviewing Score w/ Surgery Interview Score	.338**
Post-Interviewing Score w/ Pediatric Interview Score	.222*
Post-Professionalism Score w/ Medicine Professionalism Interview Score	.213*

Figure 1

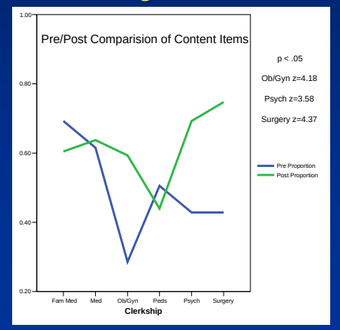
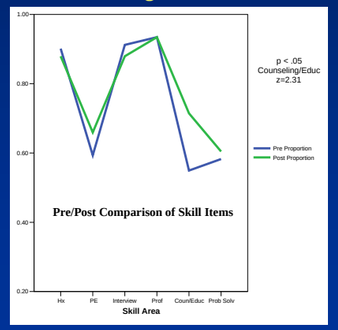
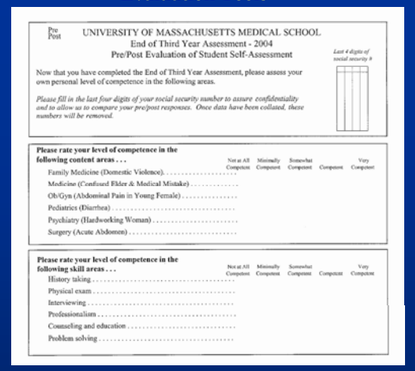


Figure 2



Evaluation Tools



Pre Post

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
End of Third Year Assessment - 2004
Pre/Post Evaluation of Student Self-Assessment

Last 4 digits of social security #

Now that you have completed the End of Third Year Assessment, please assess your own personal level of competence in the following areas.

Please fill in the last four digits of your social security number to assure confidentiality and to allow us to compare your pre/post responses. Once data have been collated, these numbers will be removed.

Please rate your level of competence in the following content areas . . .

Not at All Competent | Minimally Competent | Somewhat Competent | Competent | Very Competent

- Family Medicine (Domestic Violence) . . . . . .
- Medicine (Confused Elder & Medical Mistake) . . . . . .
- Ob/Gyn (Abdominal Pain in Young Female) . . . . . .
- Pediatrics (Diarrhea) . . . . . .
- Psychiatry (Hardworking Woman) . . . . . .
- Surgery (Acute Abdomen) . . . . . .

Please rate your level of competence in the following skill areas . . .

Not at All Competent | Minimally Competent | Somewhat Competent | Competent | Very Competent

- History taking . . . . . .
- Physical exam . . . . . .
- Interviewing . . . . . .
- Professionalism . . . . . .
- Counseling and education . . . . . .
- Problem solving . . . . . .

OSCE Stations

CONCLUSION

This study indicated students' perceived level of competence improved after completing the EOTYA. These results could offer another important element of summative feedback to third year medical students.

ACKNOWLEDGEMENTS

Pamela Peper & Linda Tupper