ORIGINAL RESEARCH

Reliability of a seminar grading rubric in a grand rounds course

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Purpose: Formal presentations are a common requirement for students in health professional programs, and evaluations are often viewed as subjective. To date, literature describing the reliability or validity of seminar grading rubrics is lacking. The objectives of this study were to characterize inter-rater agreement and internal consistency of a grading rubric used in a grand rounds seminar course.

Methods: Retrospective study of 252 student presentations given from fall 2007 to fall 2008. Data including student and faculty demographics, overall content score, overall communication scores, subcomponents of content and communication, and total presentation scores were collected. Statistical analyses were performed using SPSS, 16.0.

Results: The rubric demonstrated internal consistency (Cronbach's alpha = 0.826). Mean grade difference between faculty graders was 4.54 percentage points (SD = 3.614), with $\leq$ 10-point difference for 92.5% of faculty evaluations. Student self evaluations correlated with faculty scores for content, communication, and overall presentation (r = 0.513, r = 0.455, and r = 0.539; $P < 0.001$ for all respectively). When comparing mean faculty scores to student's self-evaluations between quintiles, students with lower faculty evaluations overestimated their performance, and those with high faculty evaluations underestimated their performance ($P < 0.001$).

Conclusion: The seminar evaluation rubric demonstrated inter-rater agreement and internal consistency.

Keywords: seminar, public speaking, evaluation, grand rounds

Introduction

The ability to communicate effectively and utilize evidence-based medicine principles are core competencies for health care professionals.[1] Pharmacists, physicians, nurses, and other health care professionals must collaborate and communicate in an interdisciplinary fashion to integrate current research findings into clinical practice.

Evaluating the reliability and validity of various forms of medical literature, and being able to educate both the public and other healthcare professionals, are important competencies in training programs and licensure.[2–6] Upon graduation, healthcare professionals frequently will be required to research and evaluate literature to answer clinical questions. In addition, many will be called upon to provide various educational presentations, either as an informal discussion or lecture, or formal continuing education seminars.

One method by which effective communication methods and use of evidence-based medicine principles may be assessed is through a seminar course. Since 1996, two seminar courses designed to instill these skills have been required as part of

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the Doctor of Pharmacy curriculum at the Texas Tech University Health Sciences School of Pharmacy. The Grand Rounds courses are 2-credit courses that occur in the fall and spring of the fourth professional year (PHAR 4241 and 4242 respectively) across three campuses (Amarillo, Dallas, and Lubbock, Texas, USA). Each semester, a student must present one 40-minute seminar on a timely and/or controversial topic, with 5–10 minutes allotted for questions and answers. Topics suitable for presentations are those that would be interesting to practicing pharmacists. These may include new medications, therapeutic controversies, practice management issues, pharmacy-related law, medical ethics, or pharmacoeconomics.

The framework utilized for development of student presentations is based on the Accreditation Council on Pharmacy Education, Accreditation Standards for Continuing Pharmacy Education.[7] Learning outcomes for the course include the ability to: 1) Define a pharmacy practice topic that is appropriately focused and is of general interest to pharmacy practitioners; 2) Design an effective presentation, synthesizing clinical literature and incorporating both basic science and pharmacy practice content, which meets ACPE guidelines; 3) Utilize a faculty mentor for feedback in the research, development, and execution of a slide presentation; 4) Demonstrate effective public communication skills; and 5) Self-evaluate presentation content and communication skills.

Prior to 2006, one faculty member would grade the content of a student seminar and another would grade communication skills. A common complaint by students was their feeling that the presentation evaluations were overly subjective, and resulted in significant grade discrepancies. Informal polling of faculty involved with grading tended to corroborate this assumption, which was consistent with respondents to a faculty survey of communication skills development.[8] This was felt in large part due to lack of specific, descriptive, objective criteria that outlined the competencies and expectations clearly in the grading form. In addition, students would sometimes complain that evaluations would differ depending upon campus location or by various levels of faculty rank.

In 2006, a new grading rubric was designed to assess both the content and communication skills of students. The grading rubric that was developed incorporated specific outcomes for each subcategory of seminar content and communication, and thus appeared to be more objective and subject to less inter-rater variability. In developing this

tool, a review of the health sciences and education literature, Internet search, and informal survey of academic pharmacy faculty was conducted via the American College of Clinical Pharmacy list serve. The course coordinator (EJM) constructed the first draft of the rubric, creating specific sections and subsections that assessed and weighted specific criteria. The criteria selected were felt essential components of a professional seminar, consistent with the goals and objectives of the Grand Rounds course. After construction, the rubric was distributed to faculty course members for review and further refinement.

In addition to developing a new rubric in 2006, a new student self-assessment process was incorporated into the course. By requiring students to view and evaluate their own presentation using the same rubric that the faculty used, it was hoped that this would provide students more insight into the grade they received and enhance development of their presentation skills.

In developing the rubric (Appendix 1), it was noted that little-to-no literature was available describing the validity or reliability of seminar evaluation tools. While a seminar grading rubric has been published in the pharmacy education literature,[9] and numerous public speaking rubrics are widely available on the Internet, the vast majority of these assessments instruments appear somewhat subjective nor are they specific for health professionals. In addition, to our knowledge, no study has assessed the utility or reliability of student self-evaluation of performance in a pharmacy seminar course.

The primary objectives of this study were to assess the consistency of faculty scoring using the revised grading rubric, and to compare the results of student self-evaluations to faculty evaluations. Secondary objectives included assessing the internal consistency of the rubric and determining if differences exist in rubric scoring depending on campus location or other factors that may influence faculty evaluations (eg, academic rank).

Methods

This was a retrospective study of fourth year Doctor of Pharmacy students enrolled in the fall 2007, spring 2008, and fall 2008 grand rounds courses (PHAR 4241 and 4242 for the fall and spring courses, respectively). Students enrolled attended a two-hour course orientation each summer that outlined the expectations and requirements of the courses and reviewed the grading rubric.

Two independent faculty members graded each presentation using the revised rubric. Written instructions for

using the rubric were included on the evaluation form and a "frequently asked questions" document was distributed to all graders. For each student presentation, two faculty members were nonrandomly selected from the faculty pool to serve as graders. Thus, faculty graders potentially varied for each student presentation. Each student's final presentation score was determined by averaging the two faculty grades. Streaming videos were made of all presentations and uploaded to WebCT 6 (Blackboard Inc, Washington, DC, USA). Students were required to view their presentations, and complete a self-assessment of their performance using the same grading rubric used by the faculty graders. While the student's self-assessment grade was not incorporated as part of their final course grade, it was required in order to successfully complete the course (ie, failure to do so would result in an "incomplete").

Data from faculty evaluations of presentations and student self-evaluations were collected. This data included the mean overall presentation grade, overall content and communication grades, and each subcategory of the content and communication assessment. The professorial rank of the faculty grader (ie, clinical instructor [resident], assistant professor, associate professor, or professor) was also collected. Student baseline demographics including age, gender, race, campus location, and pre-course enrollment GPA were obtained from the Office of Student Services. All data was input and maintained in a Microsoft Excel (Redmond, VA, USA) spreadsheet. Study approval was obtained from the Institutional Review Board.

Statistical analysis

Data were converted from Microsoft Excel to SPSS Version 16.0 (Chicago, Ill, USA). Descriptive statistics were used for baseline student information. Internal consistency of the rubric was assessed using Cronbach's alpha, which provides a point-estimate measure of how well items in the rubric correlate with each other. Cronbach's alpha was calculated using the raw scores for the 15 items in the rubric based upon scores assigned from each faculty evaluation of each student presentation.

Pearson's correlation coefficient was used to determine the correlation between the mean faculty presentation grade and student self-evaluation. Agreement of grades between faculty pairs was operationally defined as the absolute value of the difference of scores assigned by faculty pairs for each student grand rounds presentation. For example, if student A received an overall score of 87 by faculty X and 89 by faculty Y, the grade agreement score for student A

was $|87-89| = 2$. This definition provided an interval-level measure for each student presentation of how well the scores of faculty pairs agreed.

To test for differences in mean grade agreement scores between groups (ie, student gender, campus, semester), t-test and analysis of variance methods were used. Additionally, a Pearson's correlation coefficient was calculated to determine if grade agreement scores were associated with student age. A P-value of <0.05 was set for level of significance.

Results

From fall of 2007 through fall of 2008, 168 students were enrolled in the grand rounds courses (PHAR 4241 and 4242). These students delivered 252 presentations over 3 campuses (Amarillo n = 85, Dallas n = 109, and Lubbock n = 58). All faculty evaluation data were available for analysis. Two student self-evaluations were excluded due to incomplete data. Student demographics and pre-course enrollment GPA are presented in Table 1.

Internal consistency of the rubric as measured by Cronbach's alpha was 0.826. While a Cronbach's alpha of 0.70 or greater is often cited as being deemed acceptable,[10] some suggest a minimum of 0.80.[11] However, the level of acceptability may be higher or lower depending upon the purpose of the examination.[11] For this assessment, the rubric demonstrated acceptable internal consistency.

The mean grade agreement score for the 252 presentations was 4.54 percentage points (SD = 3.614). Grade agreement scores ranged from a low of 0 percentage points (both graders gave the same overall score) to a high of 20 percentage points (one grader gave a 96% while the other gave a 76%). Of note though, 92.5% of the grade agreement scores were 10 percentage points or less and 67.9% of the grade differences were 5 percentage points or less (Figure 1).

Mean grade agreement scores (difference in student presentation grades between faculty grader 1 and 2) for the three campuses were 4.6 ± 4.0, 4.9 ± 3.6 and 3.6 ± 2.8 (mean $\pm$ SD). There was no significant difference in mean grade agreement depending upon campus location ($P = 0.065$). In addition, there was no difference based on age (r = 0.045, $P = 0.476$), gender (mean grade for males was 4.9 ± 3.9 versus 4.2 ± 3.4 for females; $P = 0.138$), and results did not vary by semester (mean grades 5.01 ± 3.78, 4.21 ± 3.55, and 4.37 ± 3.48; $P = 0.311$).

To determine if differences in faculty rank may have affected scoring, each pair of faculty graders were categorized

Table 1 Baseline student demographics

Demographic	Campus			
	Amarillo (n = 55)	Dallas (n = 73)	Lubbock (n = 39)	*P*-value among campuses
Age (yrs)[a]	29.9 ± 5.8	31.2 ± 6.3	28.1 ± 4	28.3 ± 7	0.006[b]
Gender				
Male (%)	44.6	49.1	35.6	53.8	0.124
Race				
Caucasian (%)	60	72.7	42.5	76.9	<0.001[c]
Asian (%)	16	3.6	31.5	2.6	
Hispanic (%)	17	20	13.7	17.9	
Other (%)	7.2	3.6	12.3	2.6	
Pre-enrollment GPA (%)[a]	88.5 ± 4.1	87.4 ± 3.8	89.2 ± 4.3	88.6 ± 4	0.05[d]

Notes: [a]Expressed as mean ± SD; [b]Difference exists between Amarillo and Dallas; [c]Dallas differs from Amarillo and Lubbock; [d]Difference exists between Amarillo and Dallas.

as having the same academic rank, having ranks that differ by one (eg, assistant vs associate professor), having ranks that differ by two (eg, assistant vs full professor) or having ranks that differ by three (eg, resident vs full professor). Among the four strata of faculty grader pairs, mean grade agreement scores ranged from 3.89 to 4.95 (Table 2). These differences were not significant (*P* = 0.553), suggesting that grade agreement was not biased by differences in faculty rank.

In order to receive their grade, students were required to watch a video of their presentation and complete the same evaluation form as the faculty graders. There was a statistically significant correlation between the overall presentation grade, overall content score, and overall communication score between the student's self-evaluation and faculty-assessed performance (Table 3).

To determine if there was a difference in how students evaluated their performance based on the grade they received
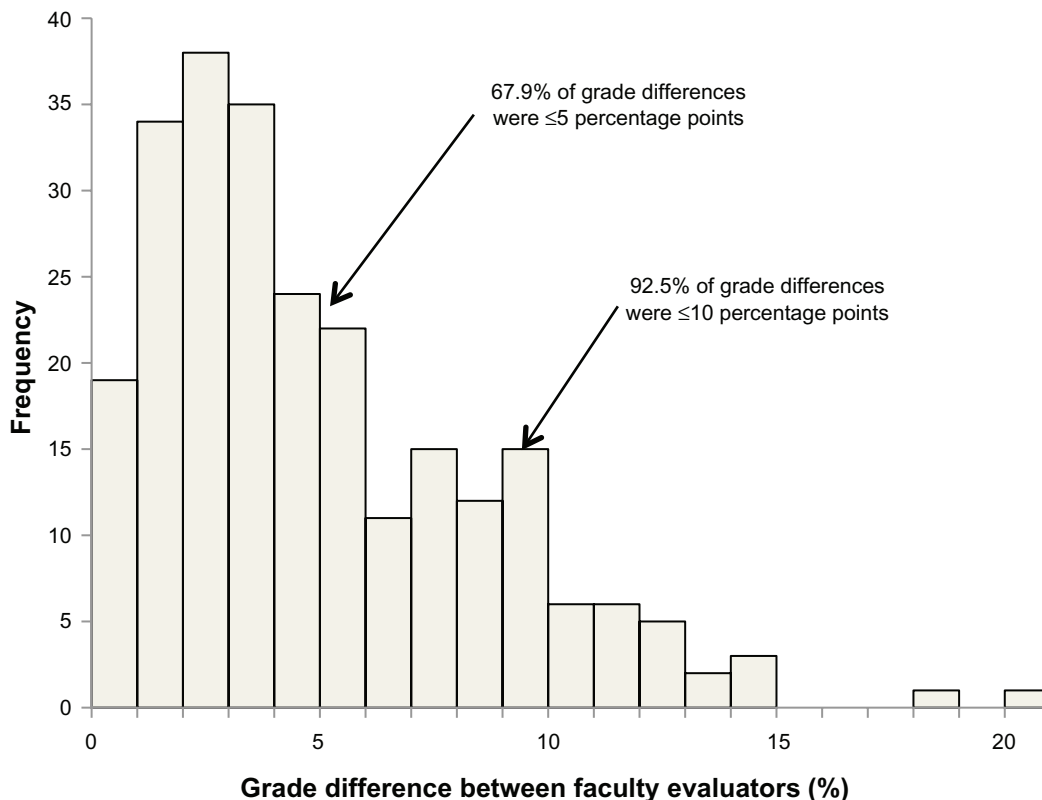
Figure 1 Histogram depicting the differences in score between faculty graders.

Table 2 Grade difference of faculty pairs stratified by differences in academic rank

Difference in academic rank[a]	N	Mean grade difference[b]	Std deviation	95% Confidence interval for mean	
				Lower bound	Upper bound
0	83	4.36	3.03	3.6996	5.0233
1	78	4.69	4.07	3.7681	5.6047
2	59	4.95	4.07	3.8864	6.0051
3	32	3.89	2.91	2.8427	4.9385

Notes: [a]Academic rank of faculty pair: 0 represents same rank, 1 represents a difference of one level of rank (eg, assistant professor and associate professor), 2 represents a difference of two levels of rank (eg, assistant professor and professor), 3 represents a difference of three levels of rank (instructor and professor); [b]No difference in scores were noted across faculty ranks by one-way analysis of variance ($P = 0.553$).

for the presentation, quintiles (ie, 0%–19%, 20%–39%, 40%–59%, 60%–79%, 80%–100%) were used to characterize low versus high performing students. As can be seen in Figure 2, mean differences between student and faculty scores differed by quintile (3.41, 0.66, −2.30, −3.98, −3.71, for lowest to highest quintile, respectively). Students in the lowest quintile overestimated their performance by a mean of 3.41 points and students in the upper quintiles underestimated their performance (F(4, 243) = 18.336, $P < 0.001$). This finding was confirmed by the correlation of faculty scores with the difference of student and faculty scores; r = −0.541, n = 248, $P < 0.001$. Low performing students overestimated their performance and high performing students underestimated their performance.

Discussion

To our knowledge, this is the first study to assess and characterize a seminar grading rubric in a health professions curriculum. Internal consistency (a necessary condition for construct validity) of this tool was acceptable (Cronbach's alpha = 0.826), demonstrating that the 15 items in the rubric consistently measured students' presentation outcomes. In addition, the inter-rater grade agreement analysis demonstrated consistency in presentation assessments. Inter-rater agreement was not biased by student age, gender, or race and did not vary significantly based upon campus, over time (ie, between semesters), or faculty rank.

While the aim of the current study was not to determine the validity of the rubric, components of validity were

Table 3 Correlation between student self-evaluation and faculty presentation scores[a] (n = 252)

Grand rounds rubric component	Pearson correlation	*P*-value
Content scores	0.513	<0.001
Communication scores	0.455	<0.001
Overall presentation scores	0.539	<0.001

Note: [a]Faculty presentation score was the student's final presentation grade (ie, average of faculty grader 1 and 2 scores).

addressed. Content validity was established by basing the rubric upon established methods including a thorough review of the literature as well as informal polling of other pharmacy institutions. In addition, the rubric was reviewed by faculty with expertise in pharmacy education to validate that the items were appropriate or valid. Furthermore, convergent validity was supported by the acceptable level of internal consistency.

Findings of the current study regarding differences in student perceptions of their performance compared to the faculty graders were consistent with those of others.[12–14] Students with grades in the lower quintiles self-evaluated their performance higher than the faculty, whereas students who were in the highest quintiles rated their performance lower than faculty. This suggested that students who performed poorly may have limited insight into weaknesses and overestimated their strengths, whereas students who performed well underestimated their strengths and overestimated weaknesses.

Despite the strengths of the current study, there are some limitations. With respect to external validity, our findings should only be generalized to education programs with student and faculty characteristics similar to ours. Due to lack of a "standard" seminar grading form, we were not able to demonstrate criterion validity for this grading tool.

Another limitation of the study was some instances of large disparities (ie, >10 points) between faculty graders. While the difference in faculty evaluations for the majority of presentations were less than 5 percentage points, there were instances in which faculty differed by more than 10 points, despite an effort to orient faculty to the grading rubric and providing detailed directions. However, averaging the two faculty evaluations mitigated most of the differences. A formal training session for faculty involved in the grading process may have yielded improved inter-rater grade agreement, and should be considered in the future.
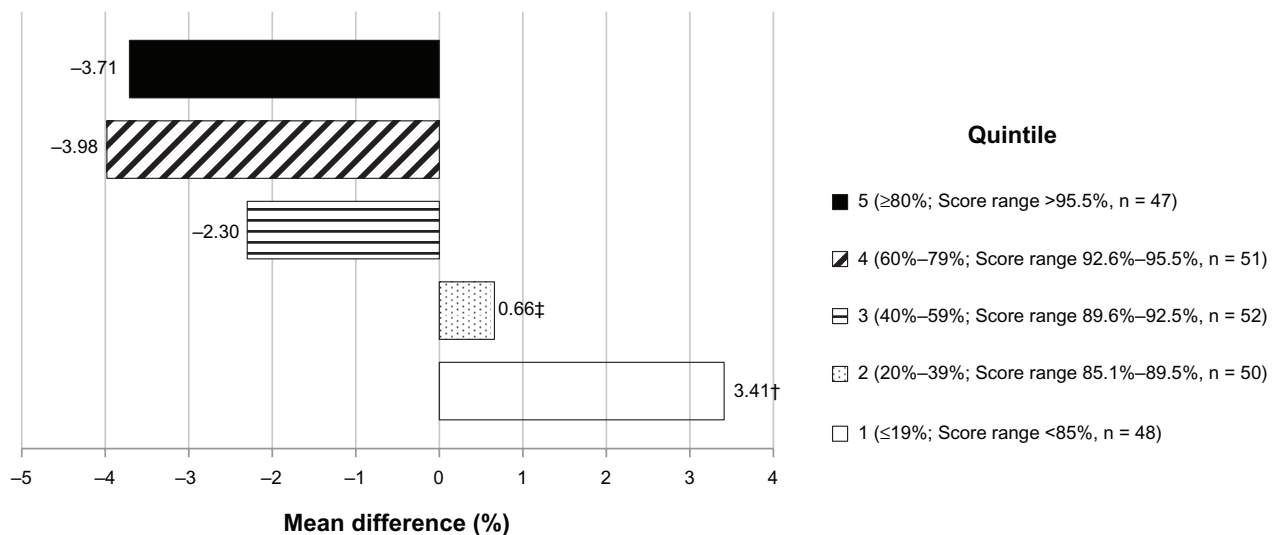
Figure 2 Differences between student self-evaluation and faculty presentation scores by quintile.[a]
Notes: [a]Faculty presentation score was the student's final presentation grade (ie, average of faculty grader 1 and 2 scores). Statistical significance assessed by Dunnett's T3 post hoc test. A negative value indicates that the student's score was less than the mean faculty grader score and a positive value indicates that it was greater; [†]Differs from quintiles 3 ($P = 0.001$), 4 ($P < 0.001$), and 5 ($P < 0.001$); [‡]Differs from quintiles 3 ($P = 0.023$), 4 ($P < 0.001$), and 5 ($P < 0.001$).

Conclusion

The seminar evaluation rubric demonstrated inter-rater grade agreement and internal consistency. While this rubric was designed specifically for a pharmacy curriculum, it could be easily adapted for use by other health professional programs that require formal student presentations. Significant correlation between faculty evaluations and students' self-assessment was noted. Similarly, there was generally good agreement between faculty grader pairs. Consistent with prior research, students who performed poorly rated their self-performance higher than the faculty. Likewise, students who performed well rated their performance lower than the faculty. Future studies should be conducted to determine if similar results would be seen if the rubric were used in other health professional curricula that require a formal presentation. It would also be useful to identify other faculty-associated factors that may result in grade disparities (eg, academic background, years of experience) and how these may be mitigated. In addition, it would be useful to assess the impact of student self-assessment on future public speaking activities to determine if performance is improved.

Acknowledgments

We would like to acknowledge Dr Melissa Medina from the University of Oklahoma who developed and shared her seminar grading form, and was of assistance in developing our form. In addition, we would like to thank Mrs Toni Bryan for her assistance with data entry.

Disclosure

The authors report no conflicts of interest in this work.

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Appendix I Grand Rounds Grading Form

Candidate:				Date:			
Title of Presentation:				Start Time:			
Evaluator:				End Time:			

Directions: Use the scale below to assess each category. Enter the value in the "Points" box. **GRADER MAY AWARD PARTIAL VALUES**. Attach additional documentation for comments if needed.

Content Evaluation (60%)

Item	Outstanding (5 Points)	Meets Expectations (4 Points)	Needs Improvement (2.5 Points)	Unsatisfactory (0 Points)	Points	Factor	Yield
Topic Selection	• Relevant to current pharmacy practice AND • Interesting to broad audience AND • Timely/cutting edge (eg, new data or controversy or applicable to current practice) AND • Scope/focus appropriate (not too broad or narrow) *All 4 elements present*	• Relevant to current pharmacy practice • Interesting to broad audience • Timely/cutting edge (eg, new data or controversy or applicable to current practice) • Scope/focus appropriate (not too broad or narrow) *3 of 4 elements present*	• Relevant to current pharmacy practice • Interesting to broad audience • Timely/cutting edge (eg, new data or controversy or applicable to current practice) • Scope/focus appropriate (not too broad or narrow). *2 of 4 elements present*	• Relevant to current pharmacy practice • Interesting to broad audience • Timely/cutting edge (eg, new data or controversy or applicable to current practice) • Scope/focus appropriate *0 or 1 element present*		5%	0
Objectives	• All objectives clearly described and use measurable terms AND • No overlap of objectives AND • All objectives addressed AND • Appropriate number of objectives (~4)	• Most objectives clearly described and use measureable terms • Little overlap in objectives • Most objectives addressed • Number of objectives reasonable	• Objectives unclear and ill defined • Objectives overlap considerably in action verbs • Most objectives not addressed • Inappropriate # for presentation length	• No objectives identified OR • Objectives do not relate to presentation		5%	0
Introduction	• Intro captured audience attention AND • Thesis/purpose exceptionally clear AND • Intro concise and well organized AND • Provided clear overview of talk	• Captured some of audience attention • Thesis/purpose somewhat clear • At times wordy or too brief, mostly organized • Generally clear overview of talk	• Did not capture audience attention • Thesis/purpose not clear • Too wordy or brief too and vague • Preview of talk confusing and disorganized	• No introduction presented in talk OR • Intro not relevant to presentation		10%	0
Organization	• Concise and complete intro and conclusion AND • Clear and logical progression throughout AND • All facts linked to topic and objectives AND • All major points highlighted	• Somewhat brief introduction and conclusion • Mostly clear and logical progression • Most facts linked to topic and objectives • Most major points highlighted	• Minimal intro and conclusion • Progression throughout difficult to follow • Little link between facts and topic/objectives • Major points sparsely highlighted	• No introduction or conclusion used • No logical progression of ideas • Facts not linked to topic and objectives • Major points not highlighted		20%	0
Primary Literature Citation and Analysis	• Comprehensive incorporation of primary literature with most relevant/timely references elaborated upon AND • Analysis of literature and/or trial design insightful and accurate	• Most key primary literature cited and incorporated • Most literature current/timely • Analysis of literature and/or trial design limited to provided author's conclusion(s)	• Little primary literature used in talk • Some key articles missing • Much literature out-of-date • Little analysis of literature and/or trial design; recited data	• Relied on secondary or tertiary literature (key primary literature missed) OR • No current literature cited OR • No analysis of literature and/or trial		20%	0
Statistical Interpretation of Data	• Tests named, explained, justified, and critiqued with alternative tests identified if appropriate AND • Number needed to treat (NNT) or harm (NNH) calculated for all appropriate data	• Tests named, explained, and justified if appropriate • NNT or NNH calculated for some data if appropriate	• Tests named but not explained or justified if appropriate • No NNT or NNH calculated if appropriate	• No statistical tests named if appropriate		10%	0

Analysis and Application in Practice	• Addressed both contemporary and future practice AND • Gave well thought-out, detailed recommendation on how to apply including additional data needed • Broad perspective given	• Addressed both contemporary and future practice • Perspective limited	• Addressed only one specific setting or perspective • Superficially addressed setting and/or perspective	• Did not address a specific setting or perspective	15%	0
Response to Questions	• All questions were answered correctly AND • Was able to justify answers AND • Paraphrased understanding of all questions	• Majority of questions were answered correctly • Most answers were justified • Paraphrased understanding of most questions	• Majority of questions were only partially answered or not answered correctly • Majority of answers poorly justified • Paraphrased few questions	• Questions were not answered or justified • Paraphrased understanding of no questions	15%	0
Content Grade					0%	

Communication Skills Evaluation (40%)

Professionalism	• Exceptionally dressed (business attire) AND • Formal tone and attitude displayed AND • May serve as a positive role model for future presenters	• Mostly appropriately dressed • Acceptable tone and attitude displayed • Possibly could serve as a positive role model for future presenters	• Somewhat appropriately dressed • Tone and attitude too informal • Questionable ability to serve as a positive role model for future presenters	• Inappropriately dressed • Would not serve as a positive role model for future presenters	10%	0
Transitions	• All transitions between major areas in talk exceptionally clear and appropriate AND • Brief summaries of key points provided for all major topic areas	• Most transitions between major areas in talk clear and appropriate AND • Brief summaries of key points provided for most major topic areas	• Few transitions between major areas in talk clear and appropriate • Few brief summaries of key points provided for major topic areas	• Transitions between major areas in talk unclear inappropriate • No brief summaries of key points provided for major topic areas	15%	0
Slides and Graphics	• Amount of material on slide facilitated understanding of presentation AND • Slides contained quality pictures, diagrams, tables, and/or animations AND • Slide background and font were professional and enhanced readability AND • Slides free from typos and grammatical errors, abbreviations defined	• Some slides contained too much or too little information • Slides mostly text, some inclusion of a few basic tables, diagrams, or clip art as pictures • Slide background and font was acceptable and readable • Mostly free from typos and grammatical errors, most abbreviations defined	• Most slides contained too much or too little information • Slides consisted almost entirely of text; tables, diagrams, or pictures rarely used • Background and font unprofessional and/or distracting and/or compromised readability • Many typos and grammatical errors, few abbreviations defined	• All slides contained either too much or too little information OR • All slides were text; no tables, diagrams, or pictures used OR • Slide background and font was unreadable and completely distracting OR • Many errors and unreadable	20%	0
Presentation Style	• Maintains eye contact with audience AND • Rarely returns to notes AND • Exceptional and consistent facial expressions, gestures, and posture. • No distracting movements or gestures	• Eye contact maintained most of the time • Returns to notes occasionally • Acceptable facial expressions, gestures, and posture. • Minimal distracting movements or gestures	• Eye contact made rarely • Most of presentation read • Inconsistent and incongruent facial expressions, gestures, and posture • Some distracting movements or gestures	• Does not make eye contact • Reads entire presentation • Consistently poor and incongruent facial expressions, repetitive, distracting gestures, and poor posture	20%	0
Elocution	• Always articulate with no pronunciation or grammatical errors AND	• Mostly articulate with few (2–3) pronunciation or grammatical errors	• Mostly inaudible and inarticulate with several (3–5) pronunciation or grammatical errors	• Inaudible and nonarticulate with numerous errors (>5) pronunciation or OR		

(Continued)

Appendix I (*Continued*)

Item	Outstanding (5 Points)	Meets Expectations (4 Points)	Needs Improvement (2.5 Points)	Unsatisfactory (0 Points)	Points	Factor	Yield
	• Always uses correct medical/scientific nomenclature AND • All word fillers (eg, "um") appropriate and not distracting AND • All attendees can hear presentation • Rate of speech ideal	• Rarely uses incorrect medical/ scientific nomenclature • Word fillers mostly appropriate and rarely distracting • Most attendees can hear presentation • Rate of speech slightly too fast or slow	• Frequently uses incorrect medical/ scientific nomenclature • Word fillers frequent and distracting • Many attendees can not hear presentation • Rate of speech significantly too fast or slow	• Constantly uses incorrect medical/scientific nomenclature OR • Constant use of word fillers • Rate of speech so fast or slow that presentation is not comprehendible		15%	0
Accuracy and Completeness of References	• Bibliography complete, in proper format, and no errors AND • All graphs, charts, and tables appropriately referenced	• Bibliography mostly complete, in proper format, with few ($<$2) errors • Most graphs, charts, and tables appropriately referenced	• Bibliography mostly incomplete, not in proper format, with several ($>$2) errors • Most graphs, charts, and tables not appropriately referenced	• No bibliography provided OR • No graphs, charts, and tables were appropriately referenced		5%	0
Time Management (Goal 40 min, *Excludes Q and A*)	• Spends an appropriate amount of time on the major sections of the presentation AND • Presentation within 2.5 minutes of target	• Spends an appropriate amount of time on a majority of the major sections of the presentation • Presentation within 2.5–5 minutes of target	• Spends an inappropriate amount of time on the majority of sections of the presentation (too much or too little) • Presentation within 5–10 minutes of target	• Inappropriate time spent on all of major sections. **Presentation $<$10 min of target results in 69% grade.** If $>$10 min presentation to be stopped and graded as-is		15%	0
				Communication Grade			0%

Strengths of Presentation:

Weaknesses of Presentation:

Overall Presentation Grade: 0%