Psychosocial Factors and Success in Clinical Speech-Language Graduate Programs

Rebecca M. Alper, Ph.D., CCC-SLP, Temple University
Linda Louko, Ph.D., CCC-SLP, University of Iowa
Richard R. Hurtig, Ph.D., University of Iowa
Karen Bryant, Ph.D., CCC-SLP, University of Iowa
Acknowledgments and Disclosures

- Department of Communication Sciences and Disorders
- No Financial Disclosures
- Dr. Karen Bryant: Director of SLP Clinical Education
- Dr. Linda Louko: Former Clinic Director and Associate Clinical Professor
Learning Objectives

After attending the session, participants will be able to:

- define perceived self-efficacy and locus of control.
- describe if and how perceived self-efficacy and locus of control are related to clinical training outcomes.
- identify some of the possible implications of the presented data for admissions and clinical training.
Background

Need for Academic AND Clinical Proficiency

Limited Information in Admissions Profiles

Psychosocial Factors and Academic/Professional Outcomes

Role of Self-Efficacy and/or Locus of Control in Clinical Training?

1(Conley & You, 2013; Goodrich, 2014; Majer, 2009; Pinquart, Juang, & Silbereisen, 2003; Wang, Bowling, & Eschleman, 2010)
Background

- Definitions
  - PLOC: “internal” vs. “external” control perceptions (Rotter, 1966)
  - PSE: “intentionality”, “forethought”, “self-reactiveness”, and “self-reflectiveness” (Bandura, 2001)
Purpose

Self-Efficacy and Locus of Control

Clinical Performance

Academic Measures
Research Questions

1. Are PLOC and/or PSE related to the standard academic and clinical measures collected by graduate programs (i.e., GRE scores, GPAs, and KASA scores)?

2. Do student PLOC and/or PSE scores change over the course of training?

3. Do PSE and/or PLOC scores contribute significantly to predicting students’ clinical success (i.e., their performance on clinical evaluations) above and beyond standard academic measures? What can we learn from individual differences?
Participants

- N= 45 clinical speech-language graduate students

<table>
<thead>
<tr>
<th>Variable</th>
<th>First-Year Students (n=25)</th>
<th>Second-Year Students (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23.8 (SD=4.30)</td>
<td>23.35 (SD=1.04)</td>
</tr>
<tr>
<td>Gender</td>
<td>23 F: 2 M</td>
<td>19 F: 1 M</td>
</tr>
<tr>
<td>Pre-Graduate Clinical Hours</td>
<td>16.48 (SD=29.04)</td>
<td>22.25 (SD=50.38)</td>
</tr>
<tr>
<td>Undergraduate GPA</td>
<td>3.81 (SD=.19)</td>
<td>3.80 (SD=.17)</td>
</tr>
<tr>
<td>GRE Composite</td>
<td>312.80 (SD=6.583)</td>
<td>309.70 (SD=6.457)</td>
</tr>
<tr>
<td>GRE Quantitative</td>
<td>155.60 (SD=3.18)</td>
<td>154.55 (SD=3.36)</td>
</tr>
<tr>
<td>GRE Verbal</td>
<td>157.20 (SD=4.77)</td>
<td>155.15 (SD=4.37)</td>
</tr>
<tr>
<td>GRE Written</td>
<td>4.32 (SD=.56)</td>
<td>4.38 (SD=.48)</td>
</tr>
</tbody>
</table>
Methods: Measures of Interest

1. Perceived Self-Efficacy (PSE)\(^1\)

- 23 items with 5-point scale
  - 1=strongly disagree \(\rightarrow\) 5=strongly disagree
  - Positive and negative statements (adjusted at scoring)
    - “If I can't do a job the first time, I keep trying until I can.” (p.666)
    - “I avoid trying to learn new things when they look too difficult for me.” (p.666)
- Score range 23 (lower self-efficacy) to 115 (higher self-efficacy)

2. Perceived Locus of Control (PLOC)\(^2\)

- 29 forced-choice statement pairs
  - “In the long run the bad things that happen to us are balanced by the good ones.” vs. “Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.” (p.12)
- Score range 0 (more internal) to 23 (more external)

3. GPA

4. KASA Scores

5. Clinical Supervisor Ratings

\(^1\)Sherer et al., 1982; Sherer & Adams 1983
\(^2\)(Rotter, 1966)
Methods: Data Collection

**August**
- PSE Scale\(^1\)
- PLOC Scale\(^2\)
- Baseline Demographics

**December**
- GPA
- KASA Evaluations
- Supervisor Surveys

**May**
- GPA
- PSE Scale\(^1\)
- PLOC Scale\(^2\)
- KASA Evaluations

\(^1\)Sherer et al., 1982; Sherer & Adams 1983
\(^2\)(Rotter, 1966)
Results: PSE, PLOC, and Baseline Measures

- Baseline correlations (per Ferguson, 2009)
  - PSE (1st & 2nd-year combined)
    - GRE Composite ($r = -.312, p = .037$)*
    - GRE Verbal ($r = -.325, p = .029$)*
    - NOT: age, prior clinical hours, GPA, GRE Quantitative, GRE Writing
  - PLOC (1st and 2nd-year combined)
    - GRE Composite ($r = .334, p = .025$)*
    - GRE Quantitative ($r = .278, p = .064$)
    - GRE Verbal ($r = .279, p = .063$)
    - NOT: age, prior clinical hours, GPA, GRE Writing
Results: Change in PSE

Beginning and End-of-Year Self-Efficacy Scores

<table>
<thead>
<tr>
<th>PSE Scale Score</th>
<th>First-Year Students</th>
<th>Second-Year Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>88.96</td>
<td>87.4</td>
</tr>
<tr>
<td>27</td>
<td>88.38</td>
<td>85.5</td>
</tr>
</tbody>
</table>

PSE August

PSE May
Results: Change in PSE
Results: Change in PLOC

Beginning and End-of-Year Locus of Control Scores

- **First-Year Students**
  - PLOC August: 10.8
  - PLOC May: 11.25

- **Second-Year Students**
  - PLOC August: 9.2
  - PLOC May: 7.29
Results: Change in PLOC
## Results: PLOC and PSE Predict Clinical Evaluations

<table>
<thead>
<tr>
<th>PLOC or PSE (parameter estimate, p-value)</th>
<th>Model Covariates (parameter estimate, p-value)</th>
<th>Predicted Outcome (model R²)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline PSE (-.022, .031)</td>
<td>N/A</td>
<td>KASA Self-Evaluation: December (.123)</td>
<td>Higher baseline PSE $\rightarrow$ Lower KASA self-evaluation score</td>
</tr>
<tr>
<td>First-Year Baseline PLOC (-.061, .008)</td>
<td>GRE Quantitative (.070, .004)</td>
<td>KASA Intervention: December (.430)</td>
<td>More internal baseline PLOC $\rightarrow$ Higher first-year KASA intervention score</td>
</tr>
<tr>
<td>First-Year Baseline PLOC (-.074, .039)</td>
<td>N/A</td>
<td>KASA Self-Evaluation: May (.154)</td>
<td>More internal baseline PLOC $\rightarrow$ Higher first-year KASA self-evaluation score</td>
</tr>
</tbody>
</table>
Results: Clinical Success Predicts PSE and PLOC

<table>
<thead>
<tr>
<th>Predictor (parameter estimate, p-value)</th>
<th>Predicted Outcome (model R²)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) KASA Self-Evaluation: December (-6.095, .017)</td>
<td>PSE: May (.399)</td>
<td>All else constant…</td>
</tr>
<tr>
<td>2) GRE Composite (-.646, .012)</td>
<td></td>
<td>1) Lower self-evaluation score ➔ Higher May PSE</td>
</tr>
<tr>
<td>3) Number of Prior Clinical Hours (.124, .019)</td>
<td></td>
<td>2) Lower GRE Composite ➔ Higher May PSE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) More prior clinic hours ➔ Higher May PSE</td>
</tr>
<tr>
<td>1) KASA Evaluation Score: December (-2.124, .030)</td>
<td>PLOC: May (.267)</td>
<td>All else constant…</td>
</tr>
<tr>
<td>2) GRE Writing Score (2.692, .064)</td>
<td></td>
<td>1) Higher KASA evaluation score ➔ More internal May PLOC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Lower GRE Writing Score ➔ More internal May PLOC</td>
</tr>
</tbody>
</table>
Results: Individual Differences

- KASA Discrepancy Scores (per Ferguson, 2009)
  - May KASA Discrepancy (1st-year)
    - GRE Composite (r = .549, p = .018)*
    - GRE Verbal (r = .483, p = .042)*
    - Technical Skills (r= .526, p=.042)*
    - Interpersonal Skills with Client (r= .562, p=.015)*
  - May KASA Discrepancy (1st and 2nd-year combined)
    - GRE Composite (r = .441, p = .013)*
    - GRE Verbal (r = .399, p = .026)*
    - December KASA Written Communication (r= -.405, p= .03)*
Results: PSE, PLOC, and Baseline Measures

- Baseline correlations (per Ferguson, 2009)
  - PSE (1st & 2nd-year combined)
    - GRE Composite (r = -0.312, p = 0.037)*
    - GRE Verbal (r = -0.325, p = 0.029)*
    - NOT: age, prior clinical hours, GPA, GRE Quantitative, GRE Writing
  - PLOC (1st and 2nd-year combined)
    - GRE Composite (r = 0.334, p = 0.025)*
    - GRE Quantitative (r = 0.278, p = 0.064)
    - GRE Verbal (r = 0.279, p = 0.063)
    - NOT: age, prior clinical hours, GPA, GRE Writing

Diagram:

- PSE (Higher PSE)
  - GRE Composite*
  - GRE Verbal*
- PLOC (More Internal)
  - GRE Composite*
  - GRE Quantitative
  - GRE Verbal
- GRE Composite
- GRE Verbal

*Significant correlations.
## Results: Individual Differences

<table>
<thead>
<tr>
<th>Predictor (parameter estimate, p-value)</th>
<th>Predicted Outcome (model $R^2$)</th>
<th>Interpretation</th>
</tr>
</thead>
</table>
| 1) GRE Composite (.157, .018)          | May KASA Discrepancy (1st-years) (r= .302) | All else constant…  
1) Higher GRE Composite score $\rightarrow$ larger discrepancy in May KASA scores |
| 1) GRE Composite (.137, .012)  
2) December KASA Written Communication (-1.653, .009) | May KASA Discrepancy (combined; .267) | All else constant…  
1) Higher GRE Composite score $\rightarrow$ larger discrepancy in May  
2) Higher KASA scores for Written Communication in December $\rightarrow$ smaller discrepancy in May |
Summary of Findings

1) Are PLOC and/or PSE related to the standard academic and clinical measures collected by graduate programs (i.e., GRE scores, GPAs, and KASA scores)?

YES!

HIGHER PSE at baseline $\leftrightarrow$ LOWER GRE Composite and GRE Verbal

More INTERNAL PLOC at baseline $\leftrightarrow$ LOWER GRE Composite, GRE Quantitative, and GRE Verbal
Summary of Findings

1) PLOC and PSE are related to standard academic measures collected by graduate programs.

2) Do PLOC and/or PSE scores change over the course of training?

- **NO!** Overall
- **YES!** Individually
Summary of Findings

1) PLOC and PSE were related to standard academic measures collected by graduate programs.
2) PLOC and PSE scores did not change across the year overall, but there was a lot of individual variability.

3) Do PSE and/or PLOC scores contribute significantly to predicting students’ clinical success above and beyond standard academic measures?

- PLOC: KASA Intervention and Self-Evaluation
- PSE: KASA Self-Evaluation
- BUT…different directions
- AND…clinical performance during the year → PLOC and PSE outcomes

YES!
Summary of Findings

1) PLOC and PSE were related to standard academic measures collected by graduate programs.
2) PLOC and PSE scores did not change across the year overall, but there was a lot of individual variability.
3) PLOC and PSE contribute significantly to predicting students’ clinical performance in some domains.

3B) What can we learn from individual differences?

- Higher GRE scores → larger May KASA discrepancies
- Higher KASA written communication scores → smaller May KASA discrepancies

Student academic and psychosocial characteristics may impact their interactions with and evaluations by supervisors.
Clinical Implications and Future Research

Clinical Implications

- Like clients, students are individuals with different strengths and challenges.
- Clinical interactions and performance are influenced by student psychosocial factors and vice versa.
- Psychosocial factors in combination with academic characteristics might help in selecting students.

Future Research

- Fostering students’ self-perceptions through supervision techniques.
- Exploring the relationship between student and client self-perceptions and client outcomes.
References


