



Predictors of Success on the Prosthetics Certification Exam

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INTRODUCTION Many factors can potentially impact pass or fail performance of a certification examination. Nursing¹, nurse midwives, athletic training, physical therapy, several medical specializations, education, financial planning² and other professions³ have conducted studies to assess whether specific variables predict performance on their respective certification exams. A literature search on predictors of success did not reveal any such studies specific to prosthetics and orthotics. The purpose of this study was to determine if significant differences existed in American Board for Certification (ABC) certification examination success or failure based on gender, Carnegie ranking of the institution from where the candidate received the degree, and whether the candidate was extending credential.

METHOD The USF Institutional Review Board approved this study. National Commission on Orthotic & Prosthetic Education (NCOPE) and the American Board for Certification (ABC) provided 158 de-identified records for this retrospective study. All candidates completed residency in 2011-2012 and were graduates of NCOPE-accredited programs.

Variables collected were: gender, institutions' Carnegie classification⁴, credential extension, ABC prosthetics certification (yes/no), and ABC Written Multiple Choice, Written Simulation, and ABC Clinical Patient Management practical exam scores.

Institutions were grouped into four classification levels: Research Universities with very high research activity (RU/VH), Master's colleges and universities - larger programs (Master's L), special focus institutions - medical schools and medical centers (Spec/Med), and other. Such grouping further protected candidate confidentiality.

Data Analysis: SPSS v22 was used for statistical analysis. To determine if significant differences existed, Chi-square/Fisher's exact tests were used for categorical values. Independent *t*-test was used for 2-level independent variables and ANOVA for 4-level independent variable. Significance was set at $p \leq 0.05^*$.

RESULTS The sample consisted of 101 male and 57 female candidates. By gender, the same percentage, 84.2% and 15.8%, passed and failed, respectively, achieving Certified Prosthetist status. Candidates from Spec/Med institutions had the highest pass rate (100%). Seventy three of the 158 candidates were seeking credential extension from CO to CPO and 67 of those succeeded. Only *credential extension* had a statistically significant relationship in *t*-tests and linear regression with obtaining prosthetics certification and with the three exams (see table).

DISCUSSION Only credential extension produced statistically significant results with prosthetics

Exams	Credential Extension	
	t-test	Linear regression
Written Multiple Choice	.000	.000
Written Simulation	.003	.006
Clinical Patient Mgmt	.010	.005

Summary of independent variable Credential Extension *p*-values Note: $p \leq .05$

certification attainment and performance on the three prosthetics certification exams. This is plausible, as these candidates had familiarity with the exam process as a whole. Also, they could possibly draw upon orthotics clinical knowledge and apply it in a prosthetics setting. A study regarding Certified Financial Planning (CFP) certification exam (Grange et al, 2003) found a significant relationship between profession-specific licenses and success on the CFP exam.

CONCLUSION This study presented the first analysis of predictors of success on the ABC prosthetics certification exam. Collection of additional variables (i.e. pre-requisite GPA, etc.) will permit analysis of more robust information to better understand whether relationships exist between these variables and performance on the certification exam, and has potential to inform practice and policy in prosthetics education and certification.

CLINICAL APPLICATIONS As the prosthetic/orthotic practitioner population ages, educational requirements change and advance and as demand for P&O services increase, it is important to understand what factors contribute to attaining licensure. These data mark the first step to understanding this dimension of P&O training which upholds professional standards and ultimately protects patients. Additionally, it would help the prosthetics profession keep pace and become a leader in best educational and clinical practices in managing patients who utilize prosthetic technologies.

REFERENCES

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⁴ Carnegie classification of institutions of higher education. Retrieved from:

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