

Western Reserve Health Education, Warren, Ohio

## Purpose

Research is strongly encouraged through medical school, residency, fellowship, and career opportunities. However, there has been limited analysis of factors that affect both volume and quality of research.

## Methods

A 24 question survey was created to examine multiple variables that the authors believe could affect paper quality and volume. This was distributed to all allopathic general surgery programs. Distinction was created between primary authorship (principal investigator) and co-authorship as well as level of evidence. ANOVA testing was carried out to elucidate which factors impact volume and quality of research from general surgery residents.

## Results

From the nation, 60 completed survey responses were evaluated. Average number of total publications were 3.1. Average number of publications as a principal investigator were 1.5, and as a co-author were 1.6.

There was no statistically significant relationship between institutional funding for article processing fees (p-0.76), any form of protected time for research (p-0.18), or educational background (p-0.19) when compared to overall number of publications.

Factors that significantly affected overall number of publications involved program type (University, university affiliated community, or community hospital [p-0.0083],) desired future practice setting (p-0.006) acceptance into a fellowship (p-0.0001), and plans to complete a fellowship (p-0.02.)

There were no variables evaluated that displayed a significant relationship to level of evidence as a first author or even as a co-author. Of note, approximately 80% of the research performed as primary author was Level 3 evidence or lower with 33% of this being Level 5 evidence. For research performed as a co-author the proportions were fairly similar with 79% of the research being Level 3 or lower quality, and 44% of this being level 5 evidence.

Surprisingly, 41% of respondents felt that their research contributed little if any to the surgical community. An astounding 31% of respondents stated they had felt that their research had little to no improvement on their personal or professional development. Highest level of evidence, of either principal investigator or co-author, did not relate to how they viewed their research either.

## Results

Research is without a doubt necessary for the further development of the profession; however, in the current research environment a large portion of residents feel their research is not helpful to themselves or the community, just as a mandatory requirement to improving competitiveness and completing residency. University general surgery programs had individuals with the largest number of overall publications. Respondents who desired future practice in a university setting had significantly higher publication volume than those who desired a community practice. Fellowship is a clear catalyst for research in residency; however, this study was clearly underpowered for many variables, and should be viewed as a proof of concept for further studies.