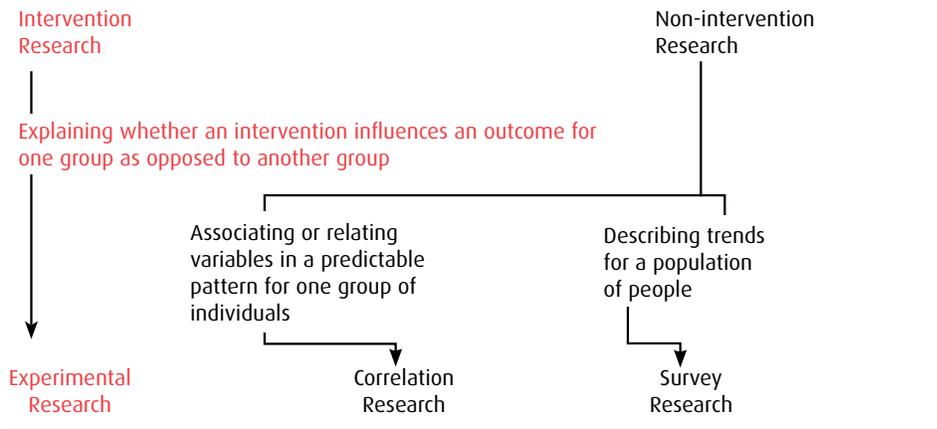


Quantitative Research in Medical Education

Key Terminology from the Literature

Independent variable	→	Cause or treatment
Dependent variable	→	Outcome, post-test, change being measured ('dependent' on independent)
Significance level	→	Conventional level, $p < .05$
Power	→	Conventional use, 80%
Effect size	→	Difference between groups
Sampling error	→	Difference between data from sample and data from target population
Sample bias	→	Can occur if data is not representative of target population
Confidence level	→	Conventional use, 95%
Confidence interval	→	Margin of error for results
Validity	→	Instrument measures what it is supposed to measure
Reliability	→	Consistency of measurement outcomes

1. Research Design



Intervention Research

Design	Characteristics	Examples*
Experimental	<ul style="list-style-type: none"> Cause & effect relationship between independent and dependent variables Two groups: (1) Experimental; (2) Control Key factors: (1) Control; (2) Manipulation; (3) Randomization 	Pretest-posttest control group design ○ X1 ○ ○ X2 ○ Post-test only control group design X1 ○
Quasi-Experimental	<ul style="list-style-type: none"> No randomization 	Control group pretest-posttest design ○ X1 ○ ○ X2 ○ Time series design ○ ○ ○ X ○ ○ ○

