```
> fitMed <- mediate(fitM, fitY, treat = "X", mediator = "M")
> summary(fitMed)
```

```
> summary(fitMed)

Causal Mediation Analysis

Quasi-Bayesian Confidence Intervals

               Estimate 95% CI Lower 95% CI Upper p-value
ACME            0.276803     0.144987         0.43  <2e-16 ***
ADE            -0.115043    -0.316462         0.07   0.268
Total Effect    0.161760     0.000729         0.31   0.048 *
Prop. Mediated  1.653327     0.507091         9.66   0.048 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Sample Size Used: 100


Simulations: 1000
```

- By running this we get the Average Causal Mediation Effects (ACME), our Average Direct Effects (ADE), combined indirect and direct effects (Total Effect), and the ratio of these estimates (Prop. Mediated).
- The ACME is the indirect effect of M (Total Effects - ADE) and the associated *p*-value value tells us if our mediation effect is significant.
- We can bootstrap our data and fit a model based on our estimated population parameters (which is recommend over the default CI estimation method above)…

```
> fitMedBoot <- mediate(fitM, fitY, boot = TRUE, sims =
10000, treat = "X", mediator = "M")
> summary(fitMedBoot)
```

```
> summary(fitMedBoot)

Causal Mediation Analysis

Nonparametric Bootstrap Confidence Intervals with the Percentile Method

               Estimate 95% CI Lower 95% CI Upper p-value
ACME            0.28078      0.14112         0.43  <2e-16 ***
ADE            -0.11179     -0.29548         0.09   0.273
Total Effect    0.16899     -0.00862         0.35   0.066 .
Prop. Mediated  1.66151     -3.92801        10.91   0.066 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Sample Size Used: 100


Simulations: 10000
```

- We now see that the ACME is the only one that is significant - this tells us we have a significant moderator - with no direct effect of our predictor or combined effect of predictor and moderator when the moderator is taken into consideration.