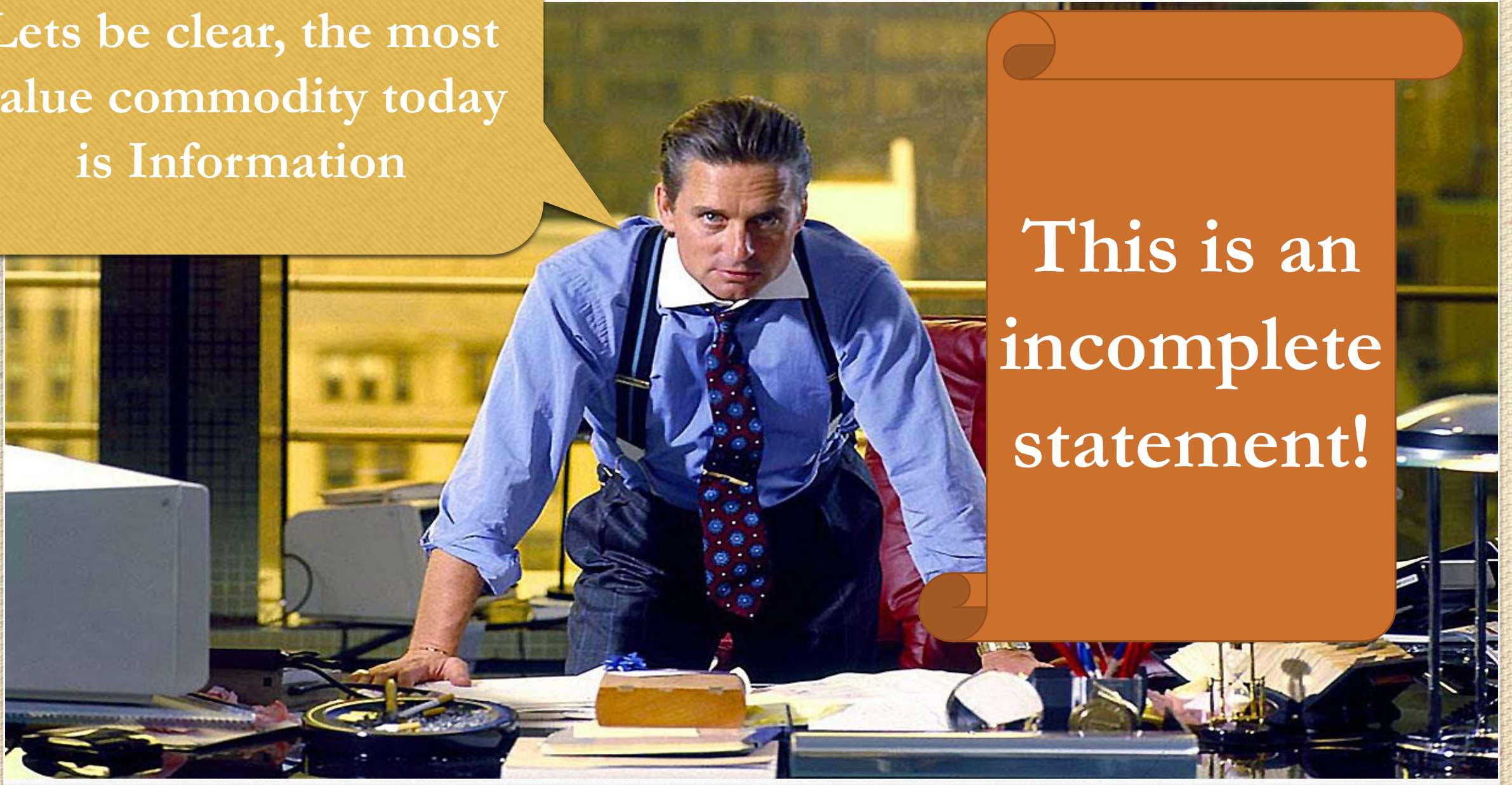


Lets be clear, the most
value commodity today
is Information

This is an
incomplete
statement!



Agenda!

- 1 • Researcher as a detective
- 2 • Accurate interpretation
- 3 • Initial investigative steps
- 4 • Article review
- 5 • Summary

As a researcher, you are a *detective*:
*An individual who investigates a phenomenon
for the purpose of understanding reality*



Accurate Interpretation is Essential



Accurate Interpretation is Essential



Accurate Interpretation is Essential



Accurate Interpretation is Essential



Accurate Interpretation is Essential



Accurate Interpretation is Essential

ON TEENAGERS, ADULT:

Statistics show that teen pregnancy drops off significantly after age 25.

*Mary Anne Tebedo, Republican state senator from Colorado Springs
(contributed by Harry F. Pincet)*

MONDAY

DECEMBER 1999

Accurate Interpretation is Essential



Interpretation starts with a reliable source

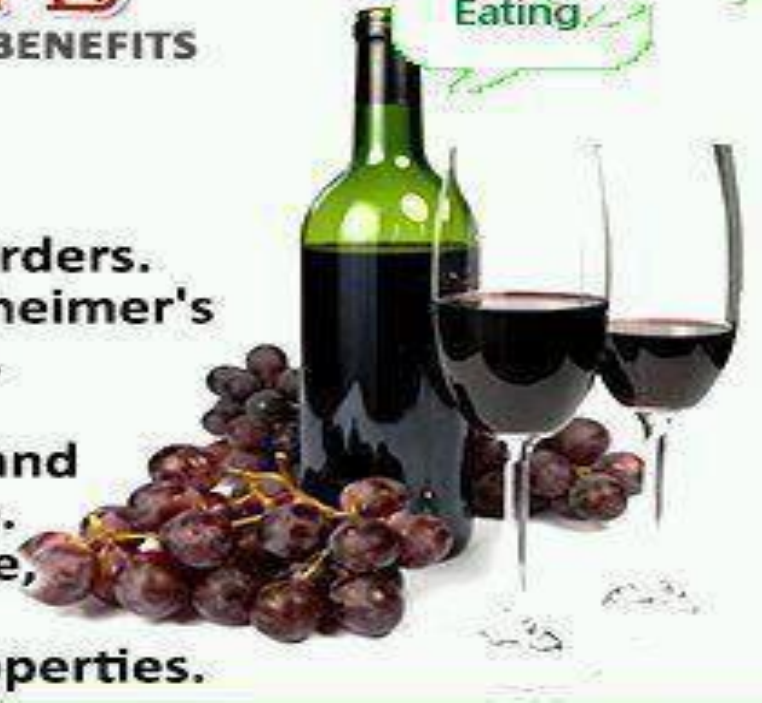
Drinking a bottle of wine every day is good for your health!



RED WINE

HEALTH BENEFITS

- Rich in Melatonin.**
- Rich in Resveratrol.**
- Rich in Saponin.**
- Prevents sleeping disorders.**
- Protection against Alzheimer's disease and dementia.**
- Anti-oxidant.**
- Reduces risk of heart and cardiovascular disease.**
- Prevents lung, prostate, and breast cancer.**
- Anti-inflammatory properties.**



Interpretation starts with a reliable source

- Author
 - h-index – measure of both productivity and citation impact
- Article
 - Peer Reviewed
 - Number of citations
- Journal
 - Impact factor



A randomised controlled trial of the effects of mindfulness practice on medical student stress levels

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CONCLUSIONS Mindfulness practice reduced stress and anxiety in senior medical students. Stress is prevalent in medical students and can have adverse effects on both student health and patients. A simple, self-administered, evidence-based intervention now exists to manage stress in this at-risk population and should be widely utilised.

A randomised controlled trial of the effects of mindfulness practice on medical student stress levels

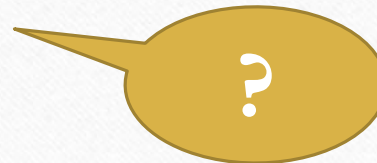
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- Participants

- 66 Medical students in their final 2 years of their degree course

- Method – Materials

- Perceived Stress Scale (PSS): 10 item, Likert type scale
- Depression, Anxiety, and Stress Scale (DASS): 42 item, Likert type scale
- Mindfulness program on a CD



A randomised controlled trial of the effects of mindfulness practice on medical student stress levels

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- Intervention
 - CD containing 30 minutes of spoken guided mindfulness practice
 - Participants asked to play & practice the mindfulness program everyday for 8 weeks
 - All participants started the program in the same week
 - Adherence ascertained by a diary recording whether or not the intervention was used everyday
 - The CD was given to the control group at the end of the 8-week trial as an incentive to remain in the trial

A randomised controlled trial of the effects of mindfulness practice on medical student stress levels

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Procedure

Perceived Stress Scale (PSS) and Depression, Anxiety, and Stress Scale completed at T1, T2, and T3

	T1	8 weeks	T2	8 weeks	T3
Randomized	Baseline Test	Intervention	Testing		Testing

Results

Measure	Normative Control	Study Participants
DASS – Depression	6.35 (6.85)	6.2 (6.3)
DASS – Anxiety	4.77 (4.79)	7.1 (6.7)
DASS – Stress	11.19 (8.25)	13.2 (7.7)
PSS	14.2 (6.2)	15.7 (5.7)

Results: Between-group change over time (T1–T2)

Did the treatment have an effect on the DASS and PSS?

Measure	(T1) Baseline	T2	Sig.
DASS – Depression	No	No	$p > .05$
DASS – Anxiety	No	Yes	$p < .05$
DASS – Stress	No	No	$p > .05$
PSS	No	Yes	$p < .05$

Results at Time 2 / Significance

Measure	Normative Control	Study Participants	Sig.
DASS – Depression	6.35 (6.85)	6.2 (6.3)	$p > .05$
DASS – Anxiety	4.77 (4.79)	7.1 (6.7)	$p < .05$
DASS – Stress	11.19 (8.25)	13.2 (7.7)	$p > .05$
PSS	14.2 (6.2)	15.7 (5.7)	$p < .05$

Results: Within-group change over time (T2-T3)

Were the lowered scores on the DASS and PSS maintained from T2-T3?

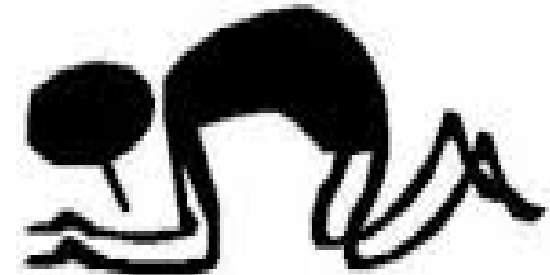
N = 6!

Measure	T3	Sig.
DASS – Depression	-	
DASS – Anxiety	Yes	$p < .05$
DASS – Stress	-	
PSS	Yes	$p < .05$

Note: 68% of the sample did not continue the meditation program. The six participants who did, practiced the meditation program an average of 12 days out of the 56 days (8 weeks)

Results based on a single indicator – p value

- P value of .05 ($p < .05$)
 - Less than a 5% probability, results occurred by chance
 - *Validates the hypothesis*



Results need to be based on other factors as well as p value!

- Effect Size – The magnitude, or size of the effect
- Importance of Effect Size
 - Studies consistently show a significant difference ($p < .05$) in pain relief between aspirin and a placebo
 - Studies consistently show a significant difference ($p < .05$) in pain relief between Dilaudid and a placebo

Potential Issues with the Article

- Eight weeks of listening to a CD everyday might be an extreme request
 - Variability within the control group can have negative consequences to the outcome
- Periodic self-reporting of adherence to the listening to the CD could result in significant error in reporting

Potential Issues with the Article

- The mindfulness exercise yielded a significant difference in one measure of stress (PSS), but not the other (DASS) – So did it really reduce stress?
- There was no reporting of effect size!

Summary

Never rush a review! You could miss a detail that could be critical to the success of your research!

- Always consider the source
- Use diagrams to fully understand the Method section – particularly the intervention
- Use tables (when not provided) to understand the Results section
- **ALWAYS** be mindful of **Effect Size!**





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