

**ADDICTED TO THE SUN OR THE
TAN? SUN AND SUNLESS
TANNING HABITS OF TANNING
“ADDICTS”**

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TANNING AS AN ADDICTION?

- Feldman et al (2004) found that tanners reported improved moods from UV beds compared to non-UV beds and chose UV tanning beds over non-UV when blinded to UV status.
- Warthan et al (2005) modified the CAGE and DSM-IV criteria for substance-related disorders and found 26% and 53% of beach visitors scored positively on them respectively



ADDICTED TO UV?

- Opioid blockade reduced UV preference in frequent tanners, some of whom then experienced withdrawal (Kaur et al 2006)
- Heavy tanners have significantly higher rates of seasonal affective disorder (Hillhouse et al 2005)
 - Circadian genes implicated in both seasonal affective disorder and addictive disorders (Falcon & McClung, 2009)



ADDICTED TO THE TAN?

- Among college students scoring positive on the mCAGE, 91% reported that their motivation to tan was to look better, while only 47% said it was to relax. (Poorsatter & Hornung, 2007)
- Can addiction be driven by appearance? Or is this more a problem of body image?



HYPOTHESES

- UV hypothesis - Tanning “addicts” are driven by an affinity for UV radiation
- Tan hypothesis – Tanning “addicts” are driven by the tanned physical appearance



STUDY QUESTIONS

1. Do tanning “addicts” overuse all forms of tanning, outdoor, indoor and sunless?
 - UV hypothesis predicts greater outdoor and indoor tanning, but not greater sunless tanning.
 - Tan hypothesis predicts greater use of all tanning.
2. Are tanning “addicts” more likely to have seasonal affective disorder than non-addicts?
 - UV hypothesis predicts greater SAD among addicts.
 - Tan hypothesis predicts no difference.
3. Are tanning “addicts” higher on body appearance concerns than non-addicts?
 - UV hypothesis suggests no difference.
 - Tan hypothesis suggests greater body appearance concerns.



SAMPLE AND SETTING

- Women (N=250) visiting Massachusetts beaches during the summer and who agreed to participate in a study on sun safety.
- Data were from baseline questionnaires completed prior to the delivery of an intervention or control condition.



MEASURES

- Modified CAGE (Warthan et al 2005)
 - 4 items about Cutting down, Annoyance about being told to cut down, Guilt, and wanting to tan first thing in the morning (Eye-opener).
 - Two or more affirmative responses are needed to meet criteria
- Seasonal Patterns Assessment Questionnaire (SPAQ; Kasper et al 1989)
 - Most widely used diagnostic and screening instrument for seasonal affective disorder
 - Assesses seasonal changes in mood, appetite, sleep, social activity, energy, weight
 - Diagnoses requires worsened states during Dec-Feb
- Beliefs About Appearance Scale (BAAS; Spangler & Stice, 2001)
 - Assesses dysfunctional attitudes about bodily appearance, scores predictive of eating disorder symptomatology
 - 20 items, 0-4 Likert scale from extremely to not at all



BAAS SAMPLE ITEMS

1. The opinion others have of me is based on my appearance.
2. The amount of influence I have on other people depends upon how I look.
3. People will think less of me if I don't look my best.
4. People would be more interested in me if I looked better.
5. My relationships would improve if I looked the way I wished.

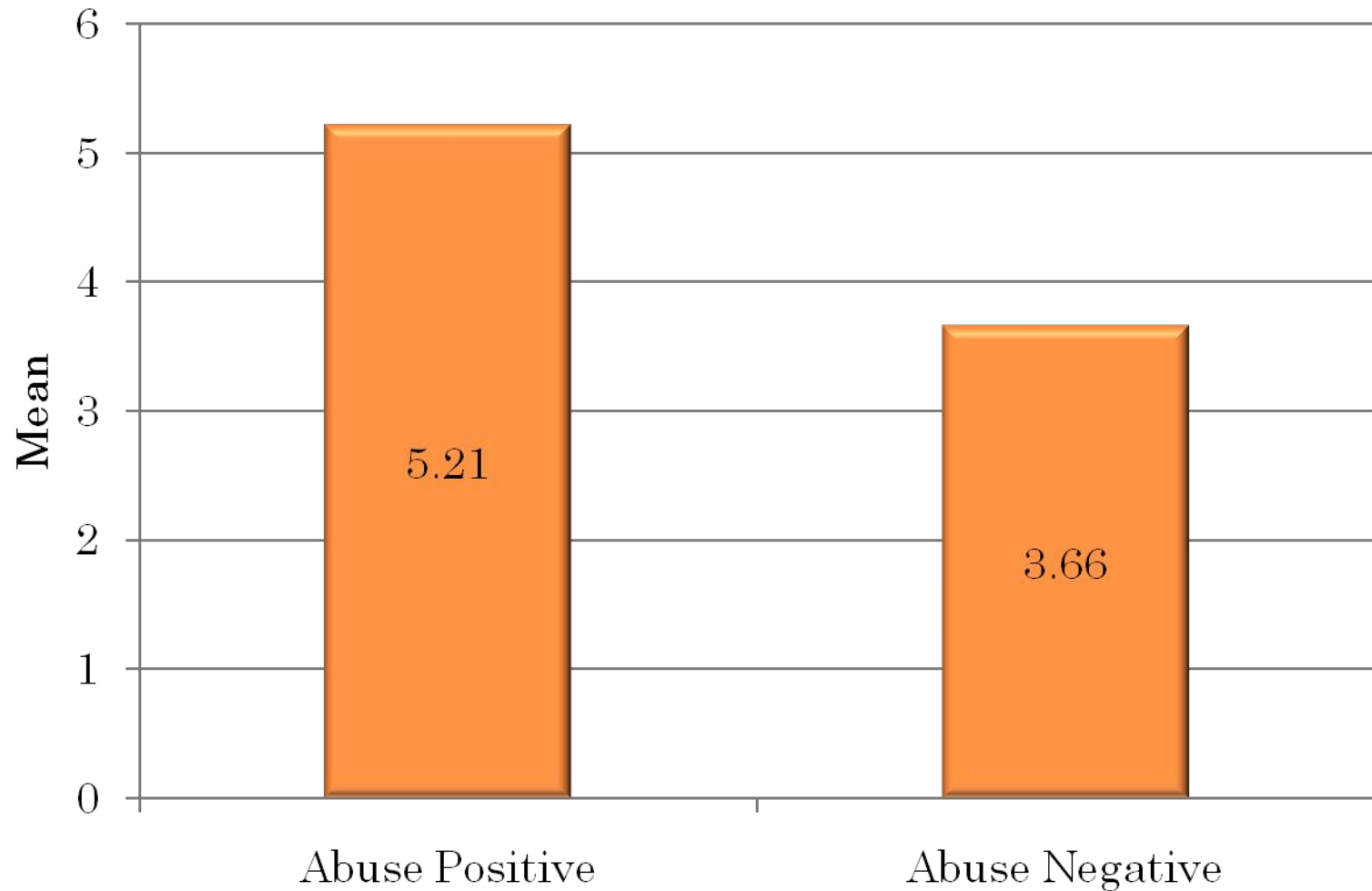


RESULTS

- 41% of the sample met criteria for “tan addiction” via the mCAGE



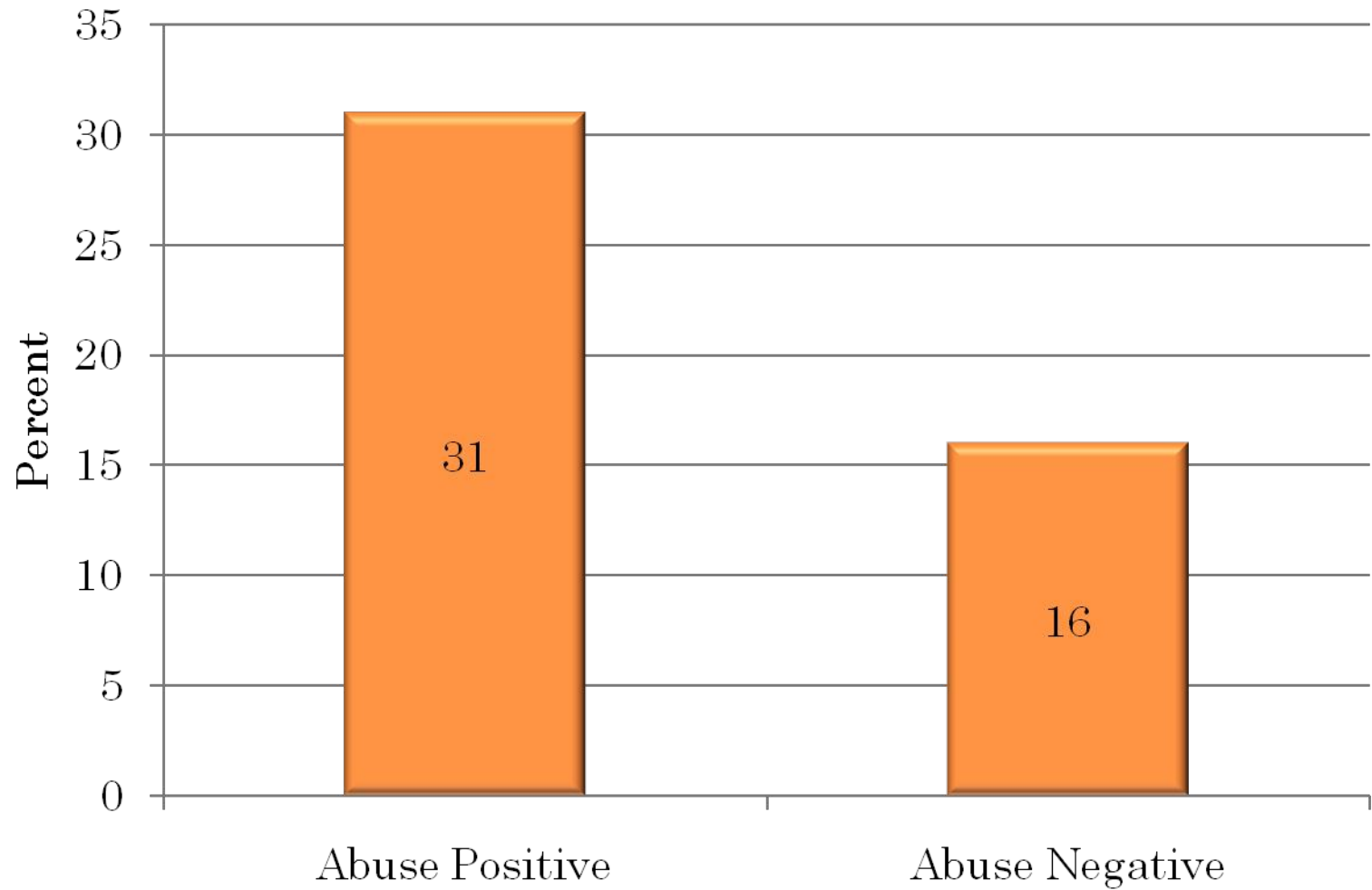
SUNBATHING (OUTDOOR)



p=.001



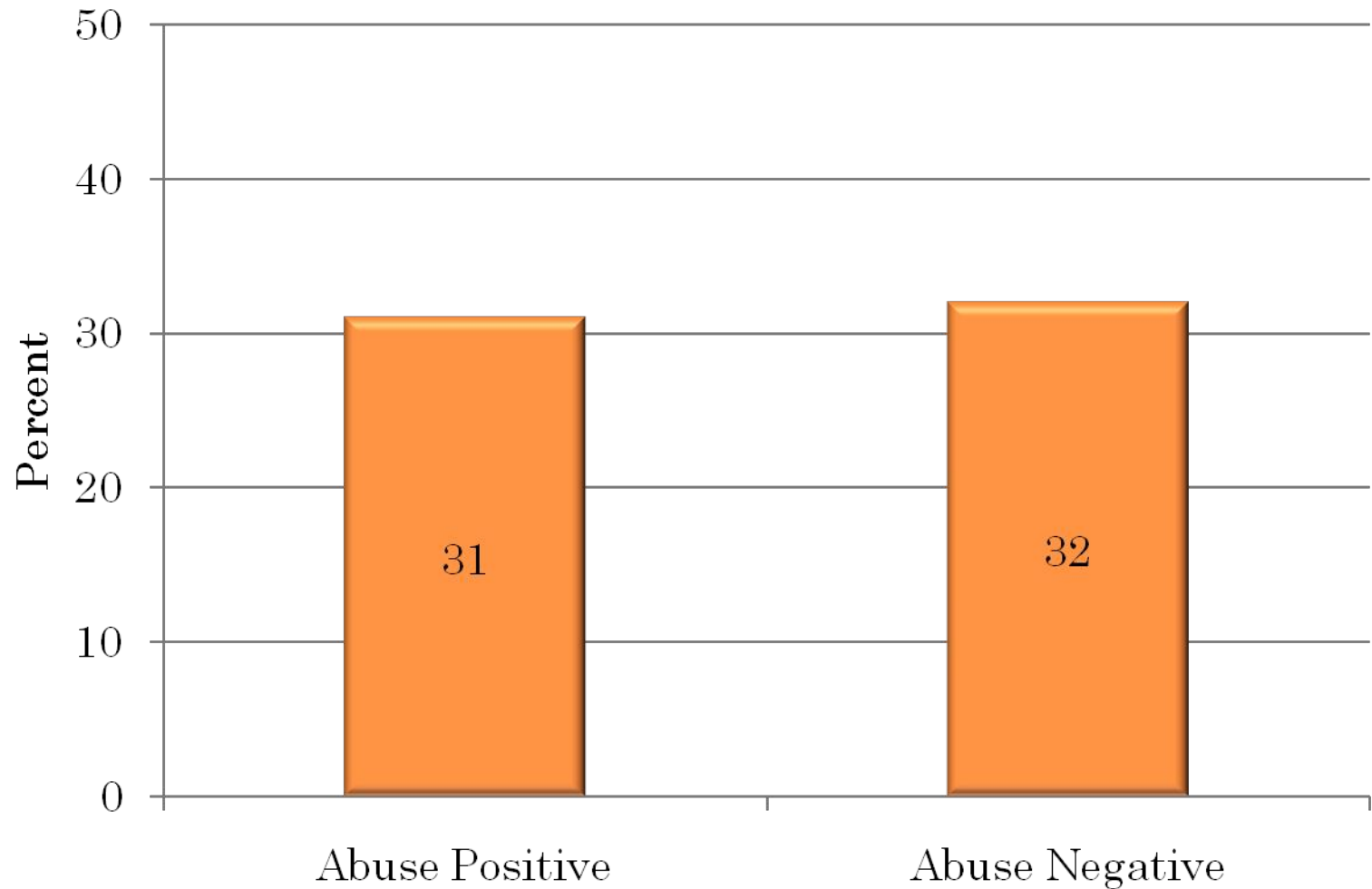
INDOOR TANNING



p=.001

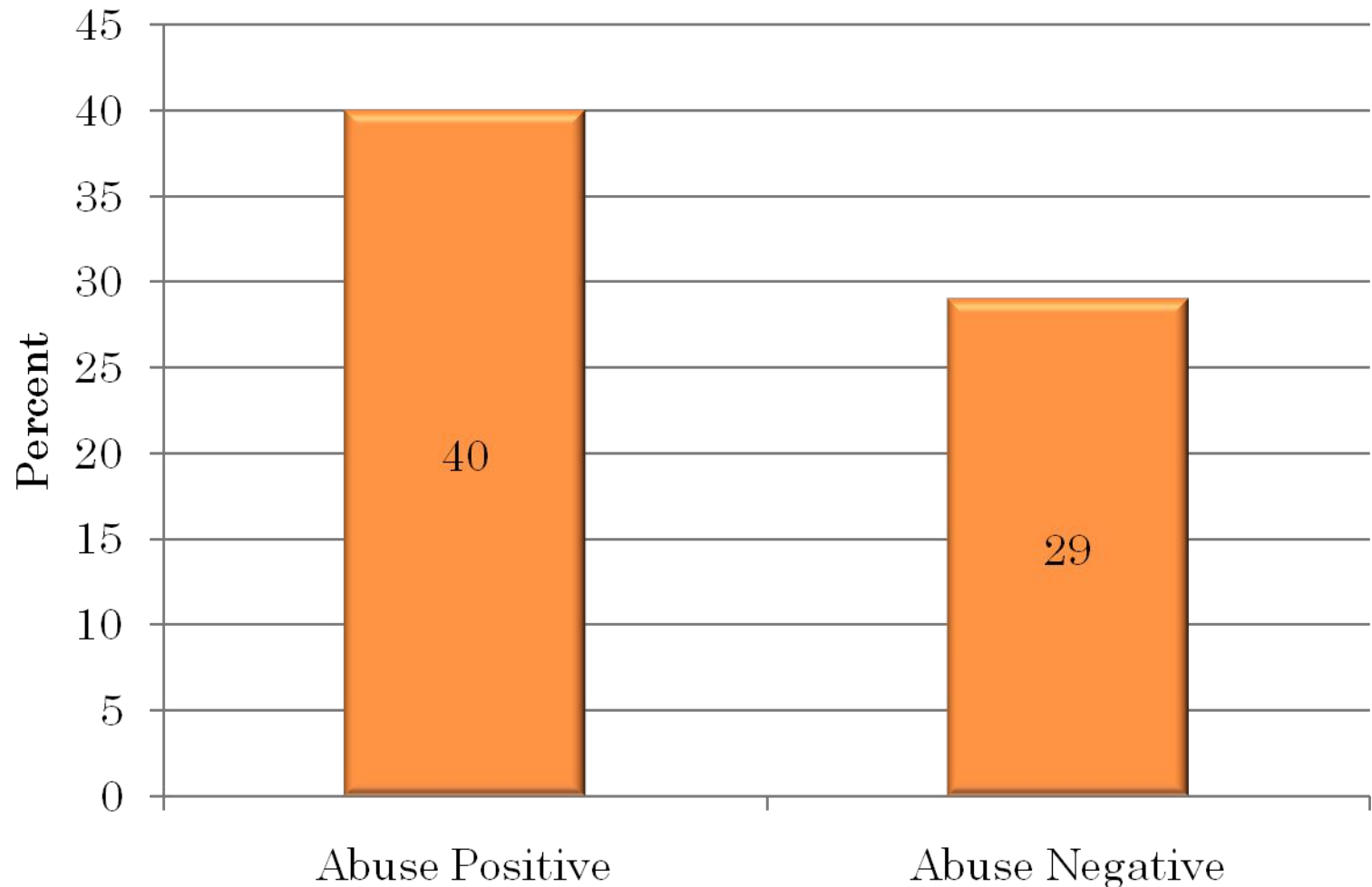


SUNLESS TANNING



p=.38

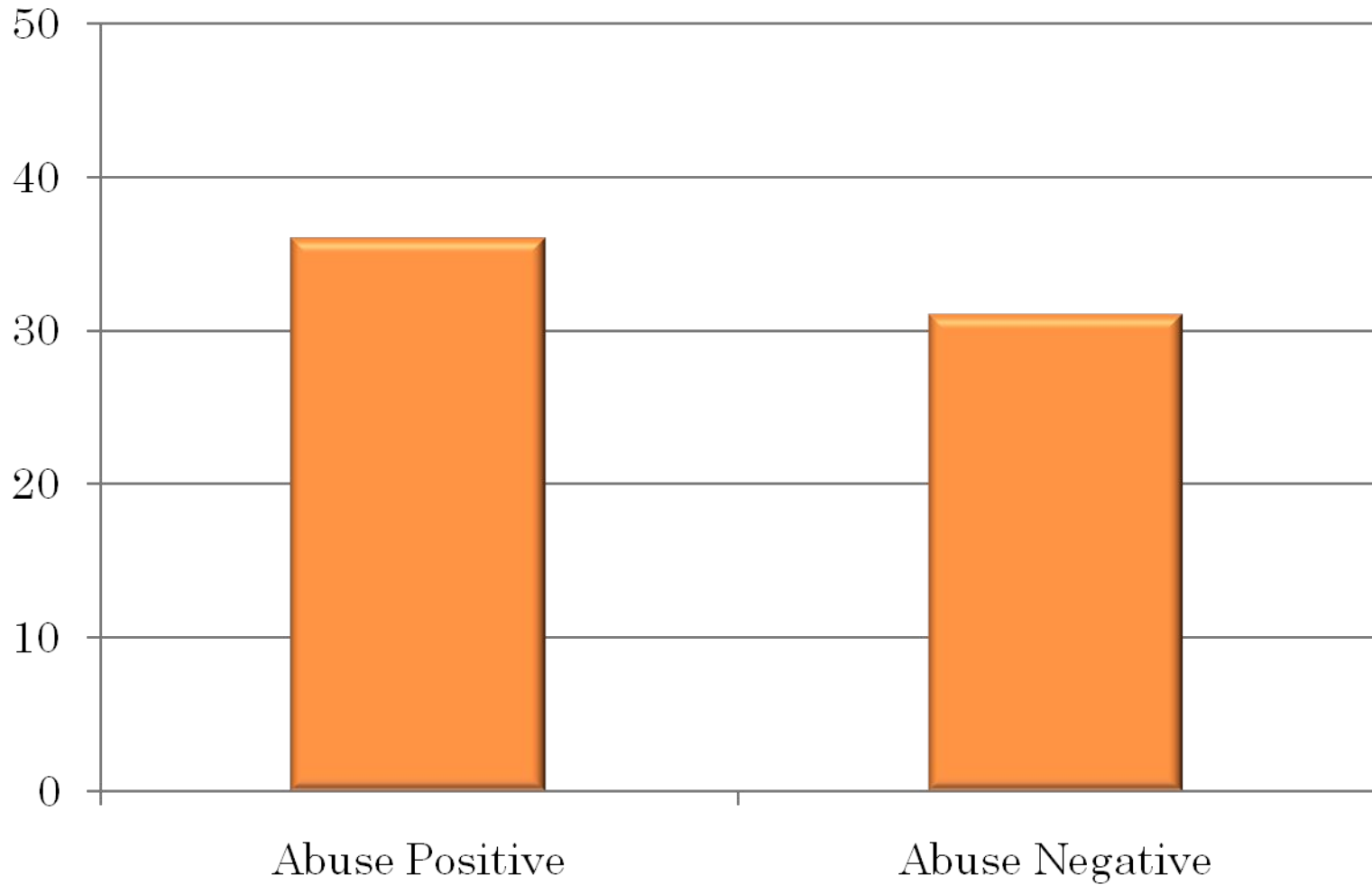
SPAQ (SEASONAL AFFECTIVE DISORDER)



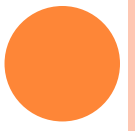
p=.09



BAAS SCORE (BODY APPEARANCE CONCERNS)



p=.16



CONCLUSIONS

- Tanning “addicts” spend more time sunbathing, are more likely to use indoor tanning than non-addicts, but not more likely to use sunless tanning.
- Tanning “addicts” are somewhat more likely to have SAD, but do not appear to have greater body appearance concerns than non-addicts.
- Preference toward UV sources of tanning and tendency toward greater SAD leans towards the UV hypothesis.



CONCLUSIONS

- Likely not an either/or situation
 - Both the tan and UV could be driving the behavior
- All subjects were beach visitors, so rates of tanning higher than general population
 - However, findings are consistent with Heckman et al (2008) who reported greater indoor and outdoor tanning but not sunless tanning in college students who met criteria for “tan addiction” than those who did not.
 - They also found higher rates of smoking among addicts which further supports an addiction vulnerability



FUTURE RESEARCH

- Many directions!
- Appears to be a subgroup of tanners with especially high rates of UV exposure that seems to have an addictive quality
- More research needed to understand the mechanisms (physiological and behavioral)
- Addiction models
- Literature has not yet addressed approaches to treatment/prevention in this high risk population.

