

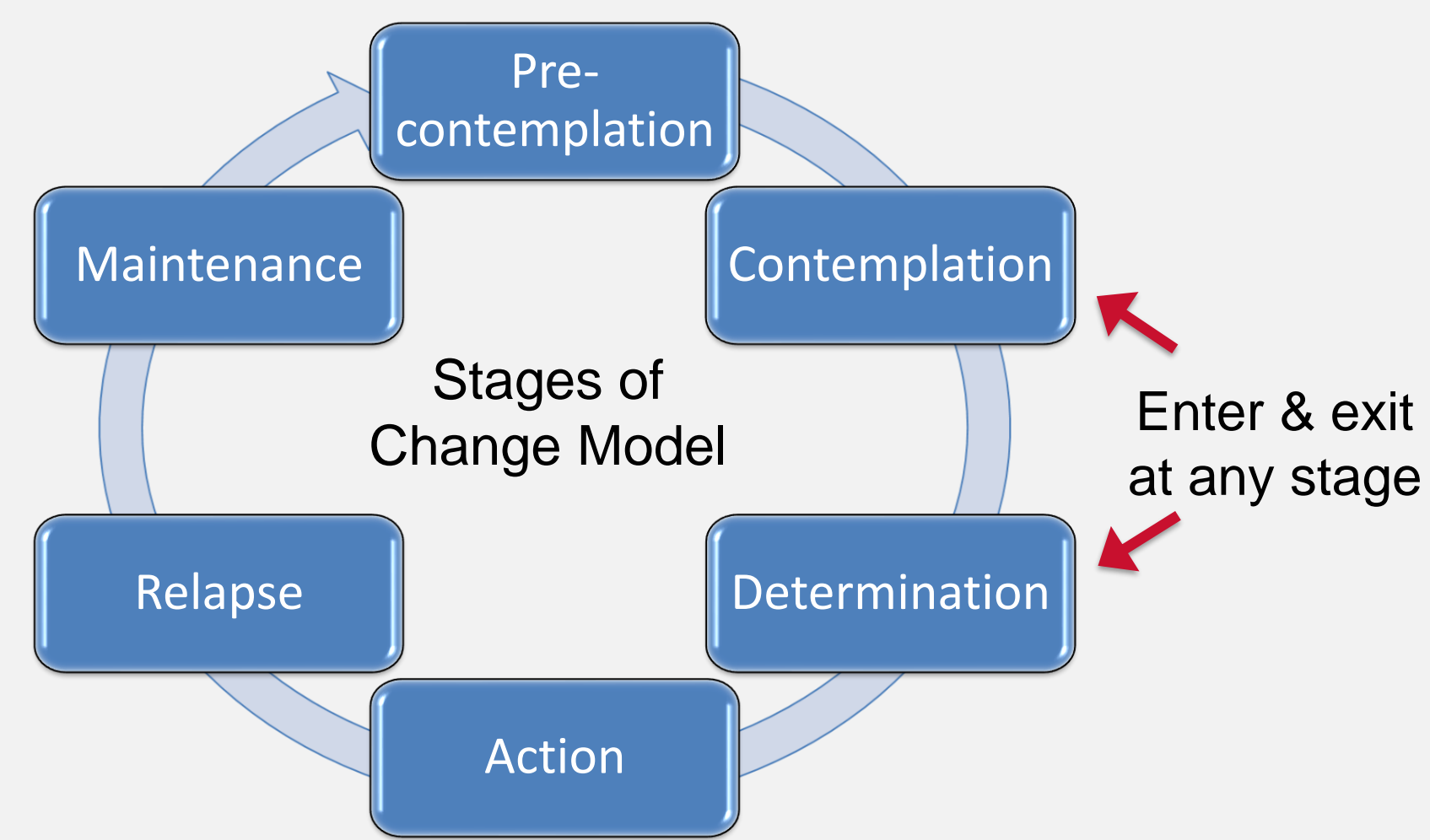
Comparing Patients' Action Stages to Medication Compliance and Tobacco Use Outcomes

Julia Melamed, Jayme Hallinan, Janet Chan, Niharika Khanna, Janaki Deepak

University of Maryland School of Medicine

BACKGROUND/RATIONALE

- In the 1970s, Prochaska and DiClemente developed the Transtheoretical Model (TTM) to describe the stages of behavior change (see figure below). It is a continuous and not decisive process¹



- Tobacco use hijacks the brain's survival instincts, giving users an incorrect "safety signal" when they use tobacco. This effect is a more powerful motivator of continued use and contributes to ambivalence about stopping²
- The UMMC Tobacco Health Practice (THP) recognizes that while patients may not feel "ready" to change, they can still respond to treatment

METHODS

- In August 2019, UMMC THP began seeing patients and utilized a modified version of the TTM to assess patients' "action stages". Action stages are reassessed and documented at every follow-up visit:

Action Stage	Score	Category
A8 Maladaptation	-5	Negative stage
A6 Struggle	-4	
A2 Resistance	-3	
A4 False Start	-2	
A0 Risk Taking	-1	Positive stage
A1 Acceptance	0	
A3 Acts on Direction	1	
A7 Adaptation	2	
A5 Early Abstinence	3	
A9 Self-directed Abstinence	4	

Action stages developed by Frank Leone, MD, MS. Converted to Likert scale by UMMC THP

- Provider can tailor initial education efforts while remaining flexible should patients' stages change throughout their journey
- Post-visit, a Certified Tobacco Treatment Specialist (CTTS) calls patients to reinforce education and obtain medications not covered by insurance. Support is ongoing, with more intensive outreach for newer patients

RESULTS

Figure 1: Patient Race (n=276)

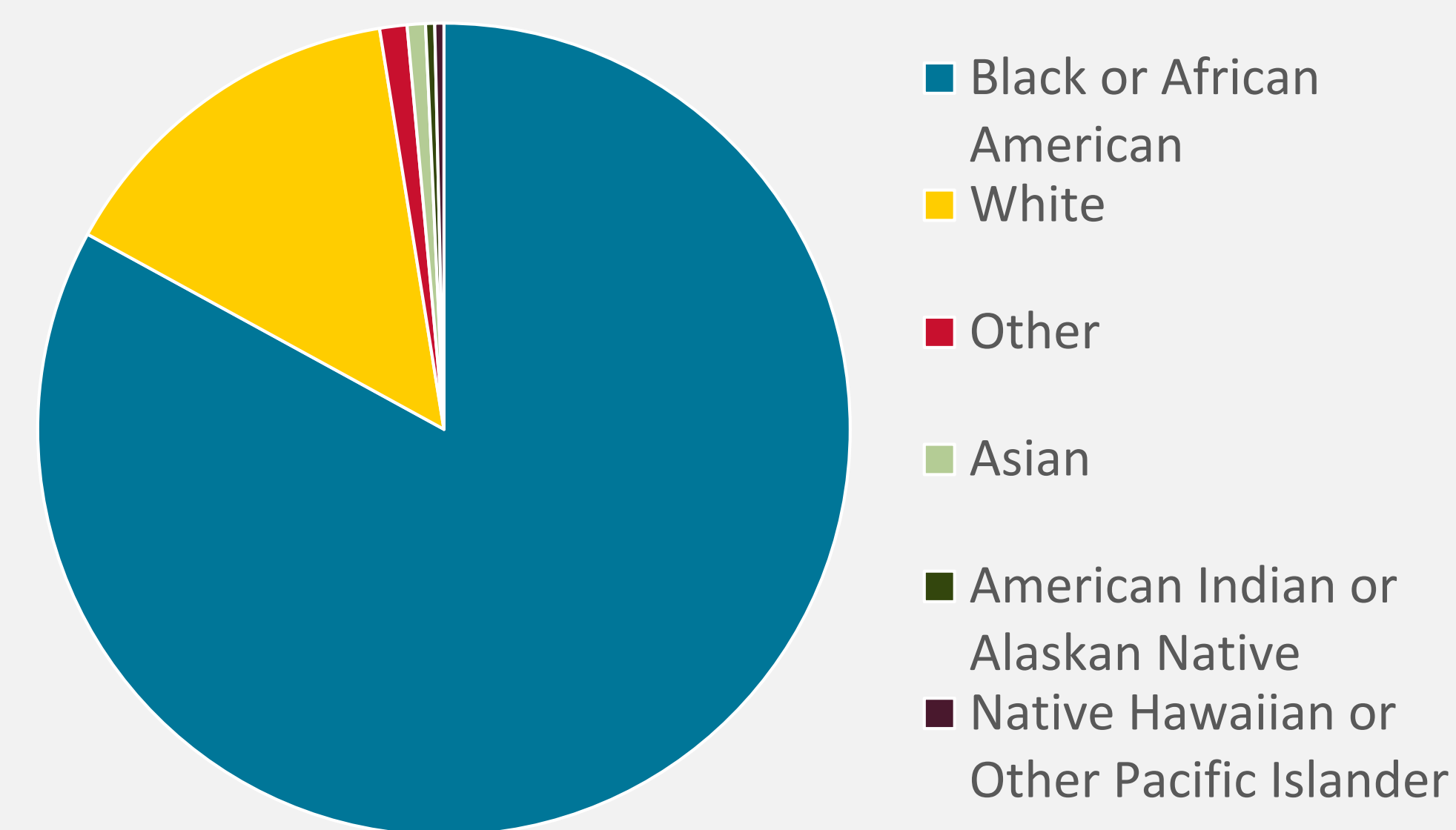


Figure 2: Action Stages Breakdown (n=276)

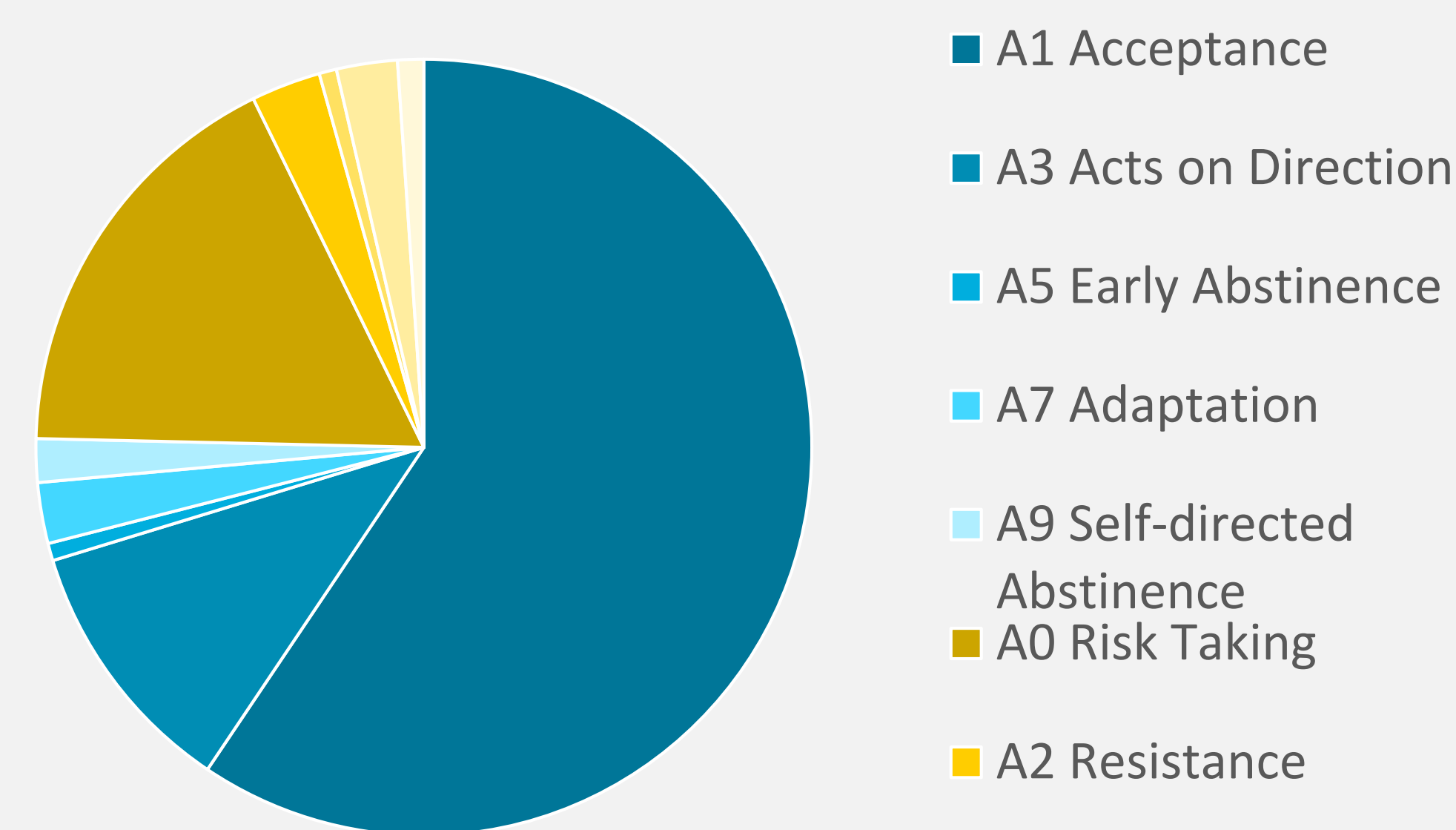


Figure 3: Initial Action Stage vs Medication Compliance

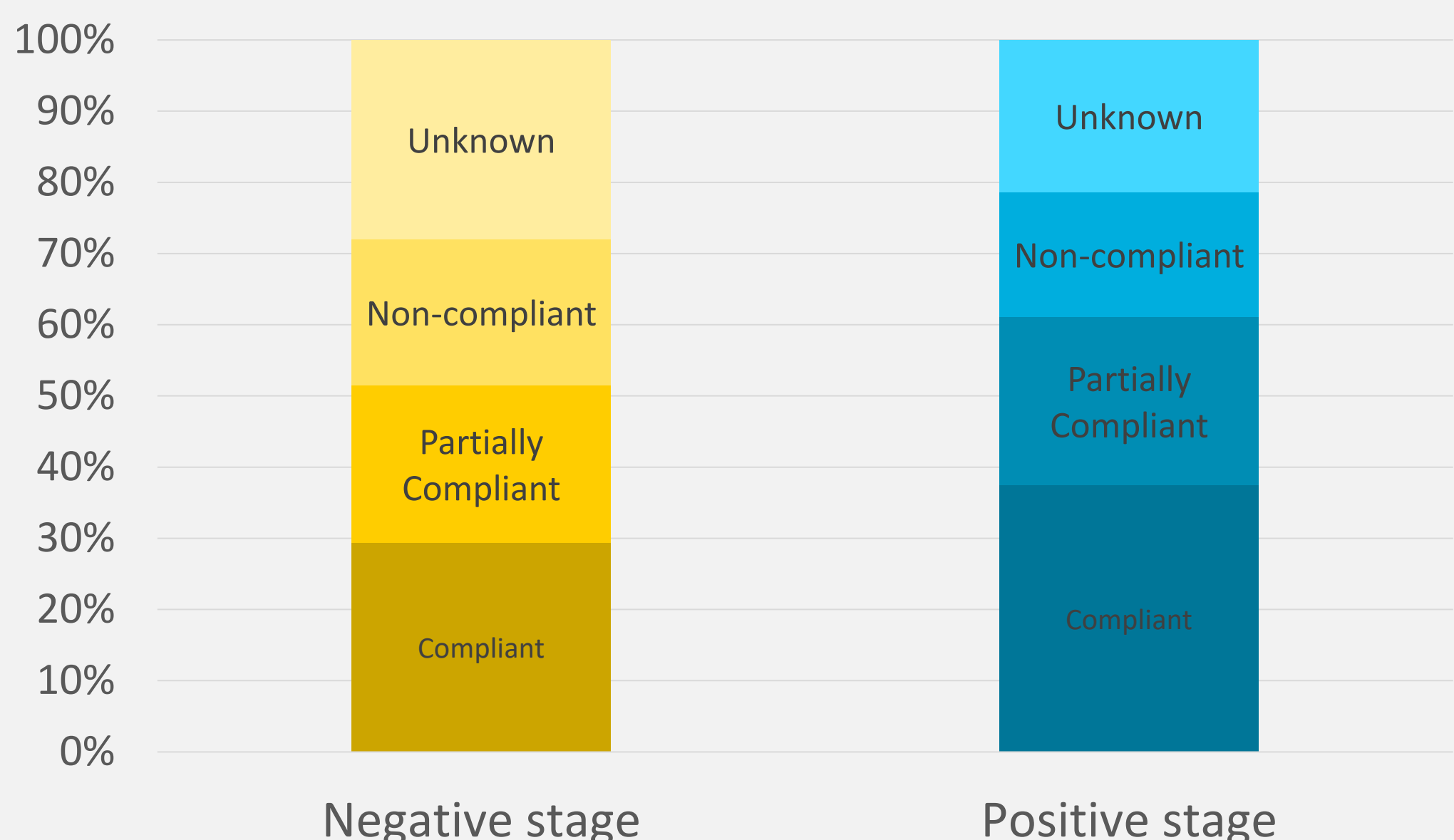


Figure 4: Most Recent Tobacco Use Status by Race

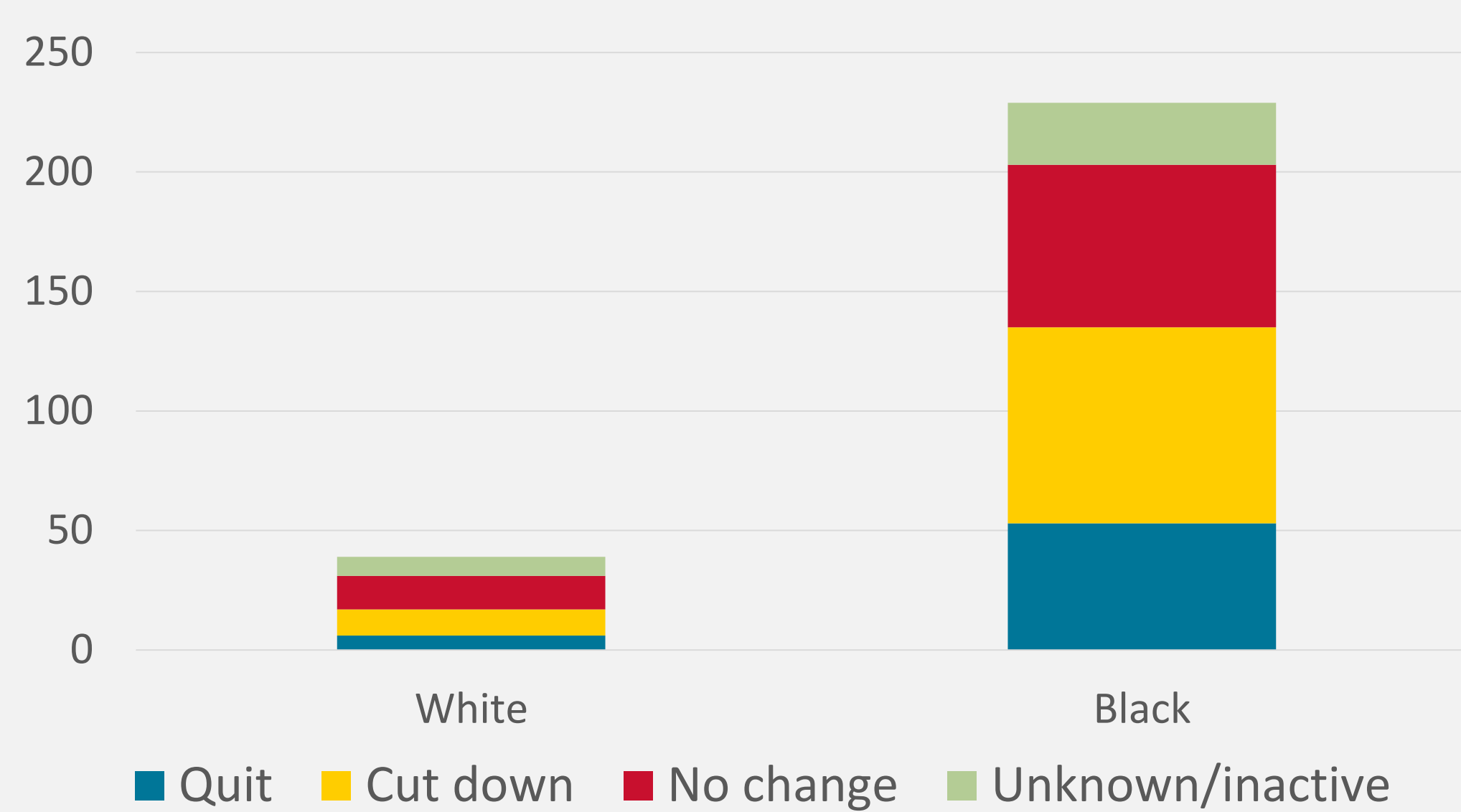


Figure 5: Most Recent Tobacco Use Status by Sex

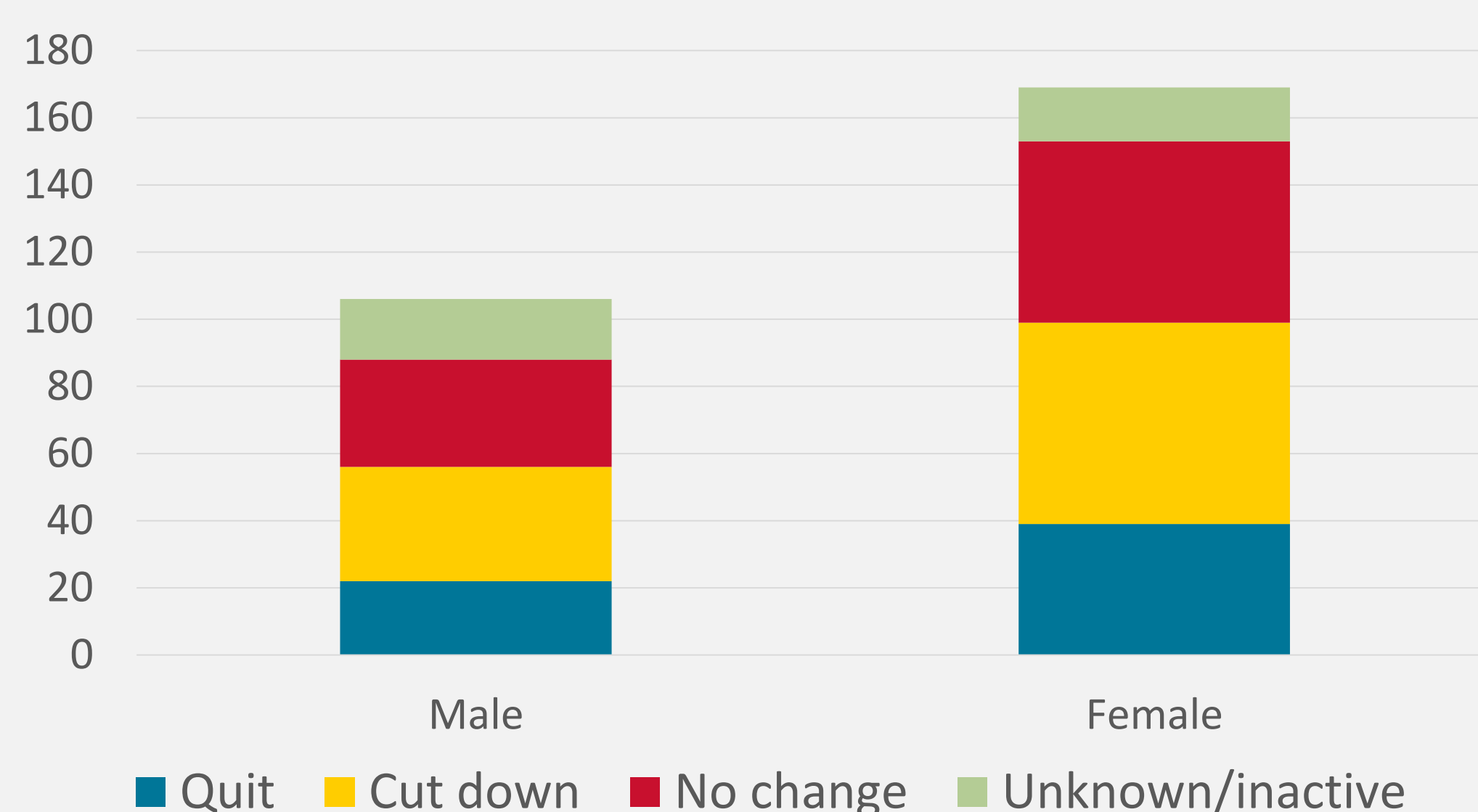
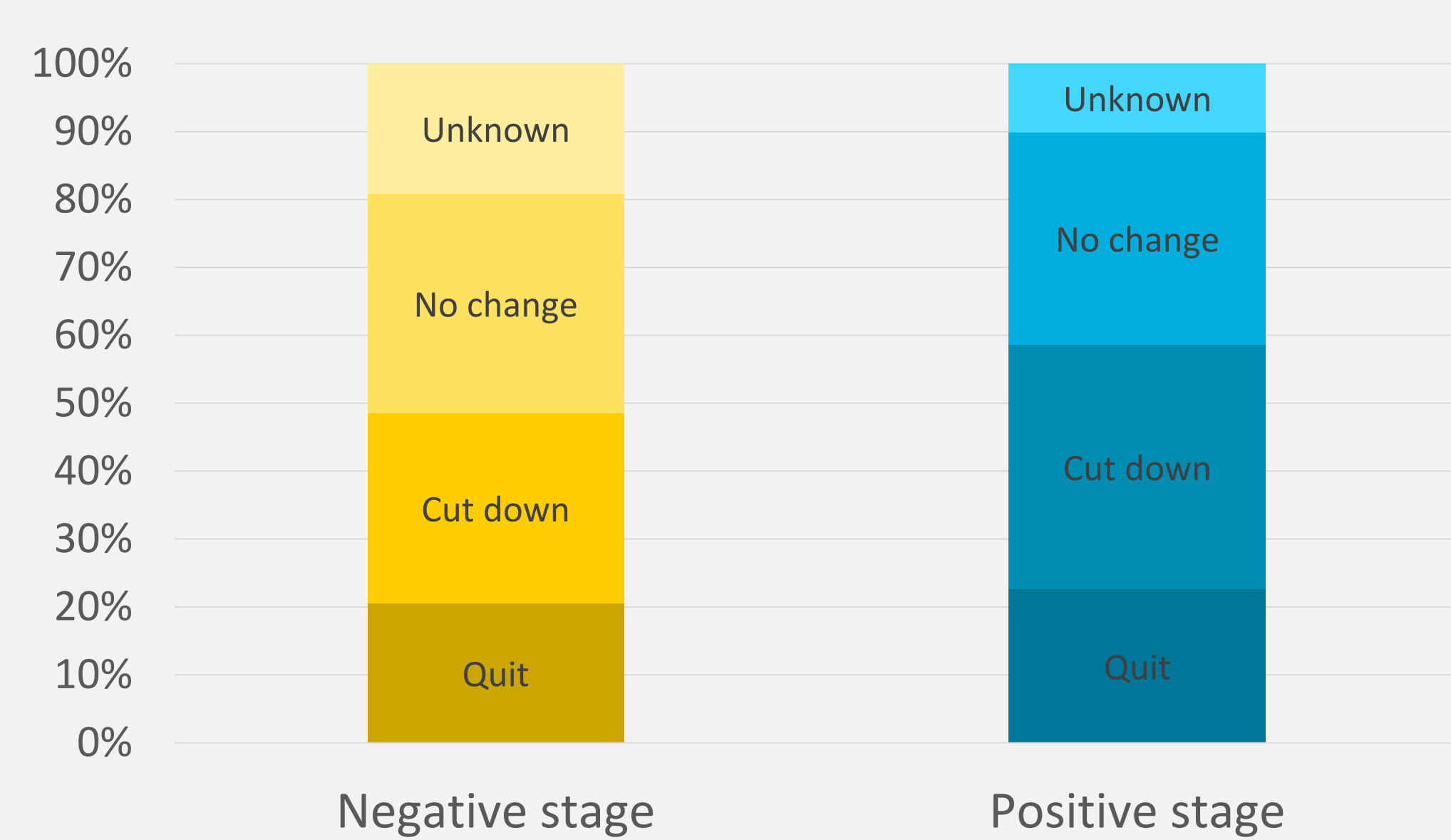


Figure 6: Initial Action Stage vs Tobacco Use Status



RESULTS

- Over 75% of patients showed readiness to change behaviors
- Initial action stages did not correlate with most recent tobacco use status ($p=.133$) or medication compliance ($p=.278$)
- Black patients were more likely to quit/cut down than patients of other races ($p=.036$)**
- Area Deprivation Index (ADI) did not correlate with most recent tobacco use status ($p=.211$) or medication compliance ($p=.197$)
- Patients who were compliant with medications were more likely to quit/cut down than patients who were non-compliant or status unknown ($p<.001$).**
- Limitations
 - Not all patients had follow up appointments to demonstrate the progression of action stages as well as the correlation of most recent action stage to current tobacco use status
 - Small sample sizes for patients in negative action stages and patients of other races

CONCLUSIONS

- Actions stages help providers tailor initial education, but they cannot be the anchor for planning outreach or predicting outcomes
- UMMC THP strives to recognize its own biases and that most patients experience some ambivalence about stopping tobacco use
- Anyone who attends a tobacco treatment appointment has already shown a degree of readiness → all patients should be offered regular outreach

FUNDING SOURCE

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REFERENCES

- ¹LaMorte, W. (n.d.). *The Transtheoretical Model (Stages of Change)*. Behavioral Change Models. Retrieved May 2, 2022, from <https://sphweb.bumc.bu.edu/ott/mph-modules/sb/behavioralchange/theories/behavioralchange/theories6.html>
- ²Leone, F. T., & Evers-Casey, S. (2012). Developing a Rational Approach to Tobacco Use Treatment in Pulmonary Practice. *Clinical Pulmonary Medicine*, 19(2), 53–61. <https://doi.org/10.1097/cpm.0b013e318247cada>

CONFLICT OF INTEREST

- No disclosures