



How do we know when to tailor an intervention? Using the Reasoned Action Approach to compare adults to youth on their beliefs about eating fruits and vegetables



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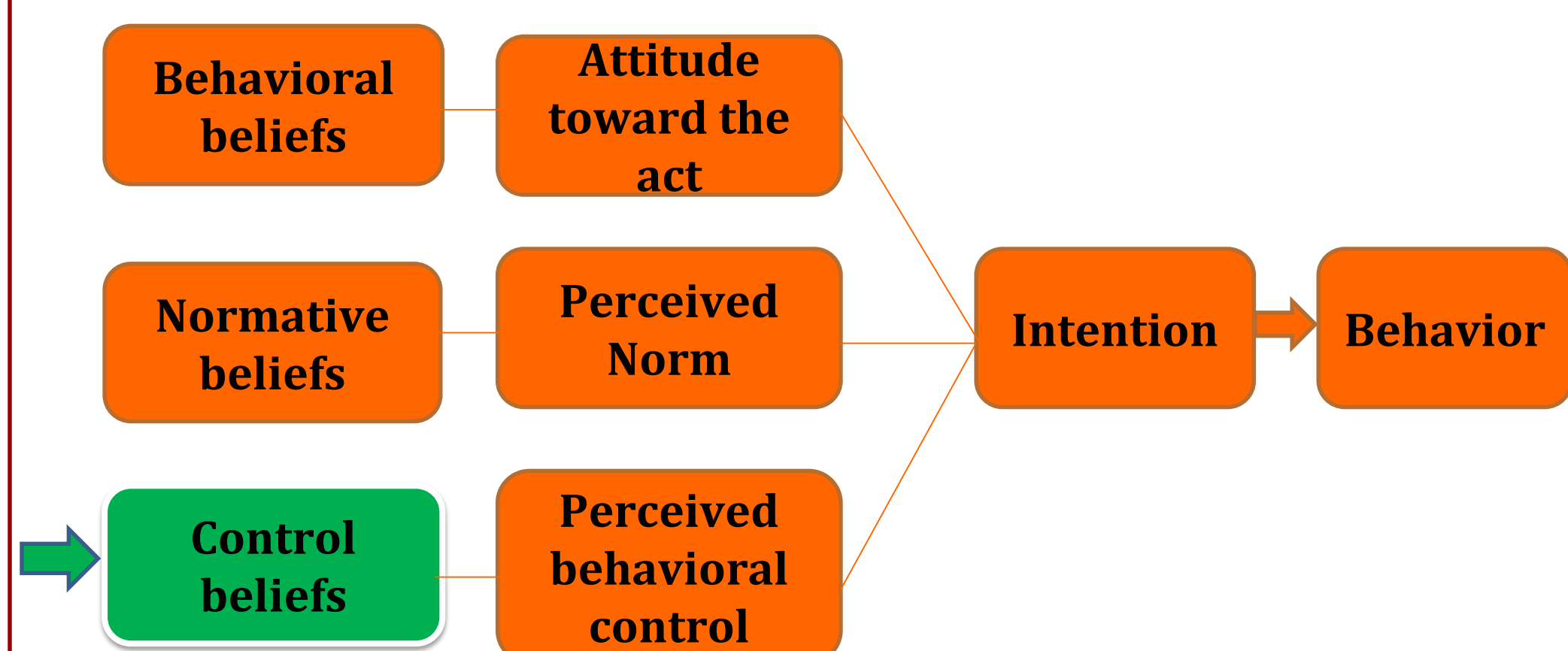
Background

- Eating a diet high in fruits and vegetables (F&V) is associated with a decreased risk of many chronic diseases, including heart disease, stroke, hypertension, diabetes, obesity, and certain types of cancers.^{1,2}
- Less than 10% of Americans eat enough F&V, with orange juice as the largest single contributor of fruit intake.²
- Tailoring has been shown to be an effective basic method in health education and promotion interventions by adapting programs to the knowledge, beliefs, circumstances, and prior experience of the priority group.³
- Theory-based analyses about beliefs can help identify which perceived barriers to address and can help in determining when we need to design different interventions for different segments.⁴
- According to the Reasoned Action Approach (RAA)⁵ salient, or top-of-the-mind beliefs are the causal factors in performing a behavior.
- Conducting a salient-belief elicitation is a critical step in the application of the RAA.⁶

Purpose

- To identify perceived barriers to eating F&V for adults and youth to determine when to tailor interventions by stage of life.

Figure 1: The Reasoned Action Approach (RAA)



Methods

- Used salient belief elicitation from RAA to identify participants' perceived barriers to eating fruits and vegetables.
- Face-to-face, 20-30-minute, semi-structured interviews were conducted with 182 adults and 221 middle school students using computer-assisted interviewing software, as part of a larger study on several eating and physical activity behaviors.
- Participants were asked one of three questions:
 - "What might make it hard for you to eat at least 2 cups of dark green leafy vegetables every week for the next three months? (n=137)"
 - "What might make it hard for you to eat at least 2 cups of orange vegetables every week for the next three months? (n=126)"
 - "What might make it hard for you to eat fruit every WEEK DAY for the next three months? (n=140)"
- Content analysis was used to identify categories of salient circumstances. Chi-square tests compared adults to youth on frequency of mentioning barriers.
- The study was approved by the Indiana University, Bloomington Committee for the Protection of Human Subjects (Study #05-10563)

Results

Table 1: Proportion (%) Mentioning Salient Barriers

Perceived Barrier	Adults (n=182)	Students (n=221)	Total (N=403)
Not having F&V readily available	31.9	28.5	30.0
Not liking or enjoying*	19.8	29.4	25.1
Not having enough time**	30.2	13.1	20.8
Having high cost**	24.7	3.2	12.9
Having to eat them alone*	6.0	16.7	11.9
Not having strategies for time & motivation	6.0	10.0	8.2
Having to prepare them**	15.4	0.5	7.2
Not having social support	3.8	2.3	3.0
Not having strategies for amount	2.2	2.7	2.5

*p<0.05; **p<.001

Figure 3: Significant Differences in Salient Beliefs

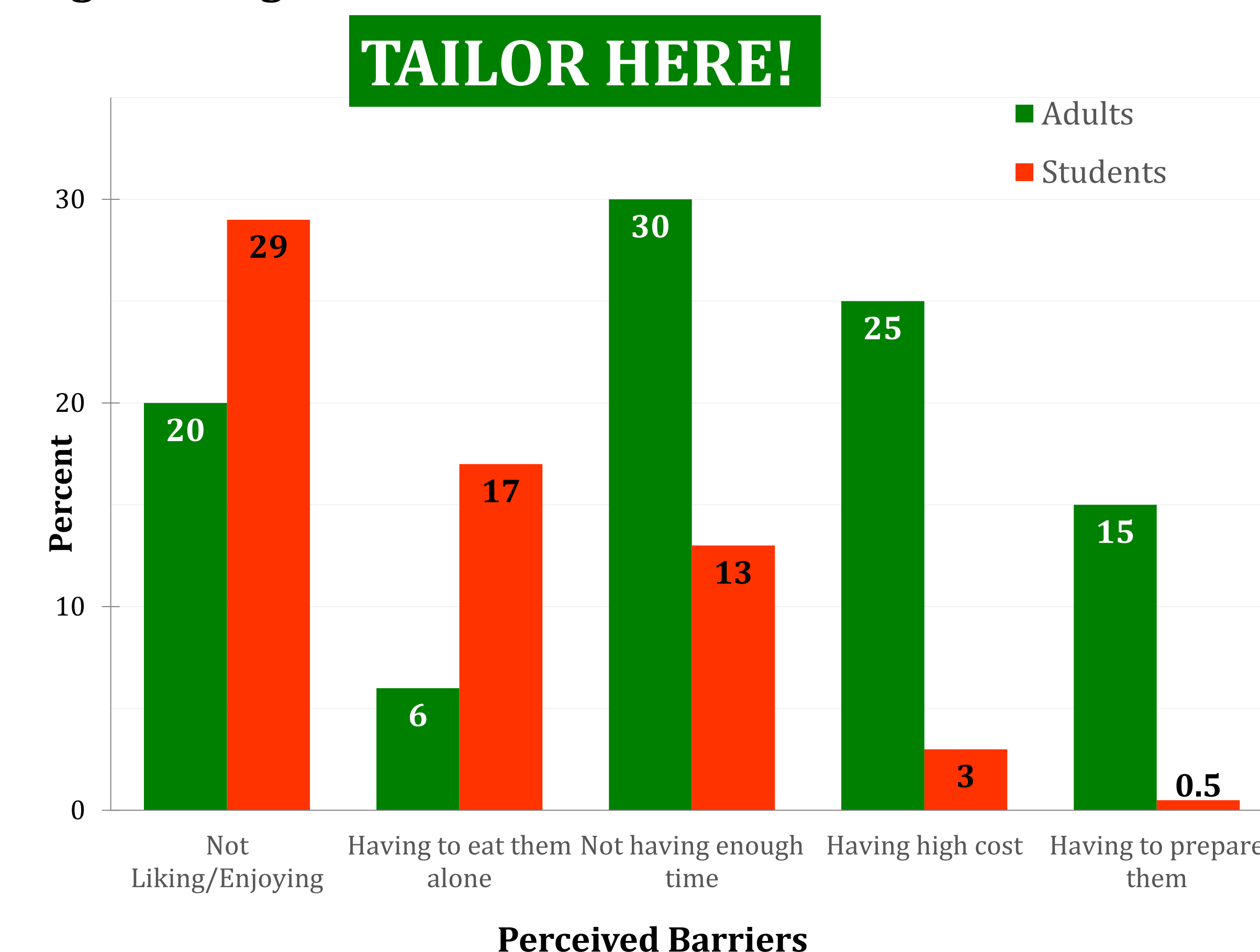


Figure 2: Similarities in Salient Beliefs Mentioned

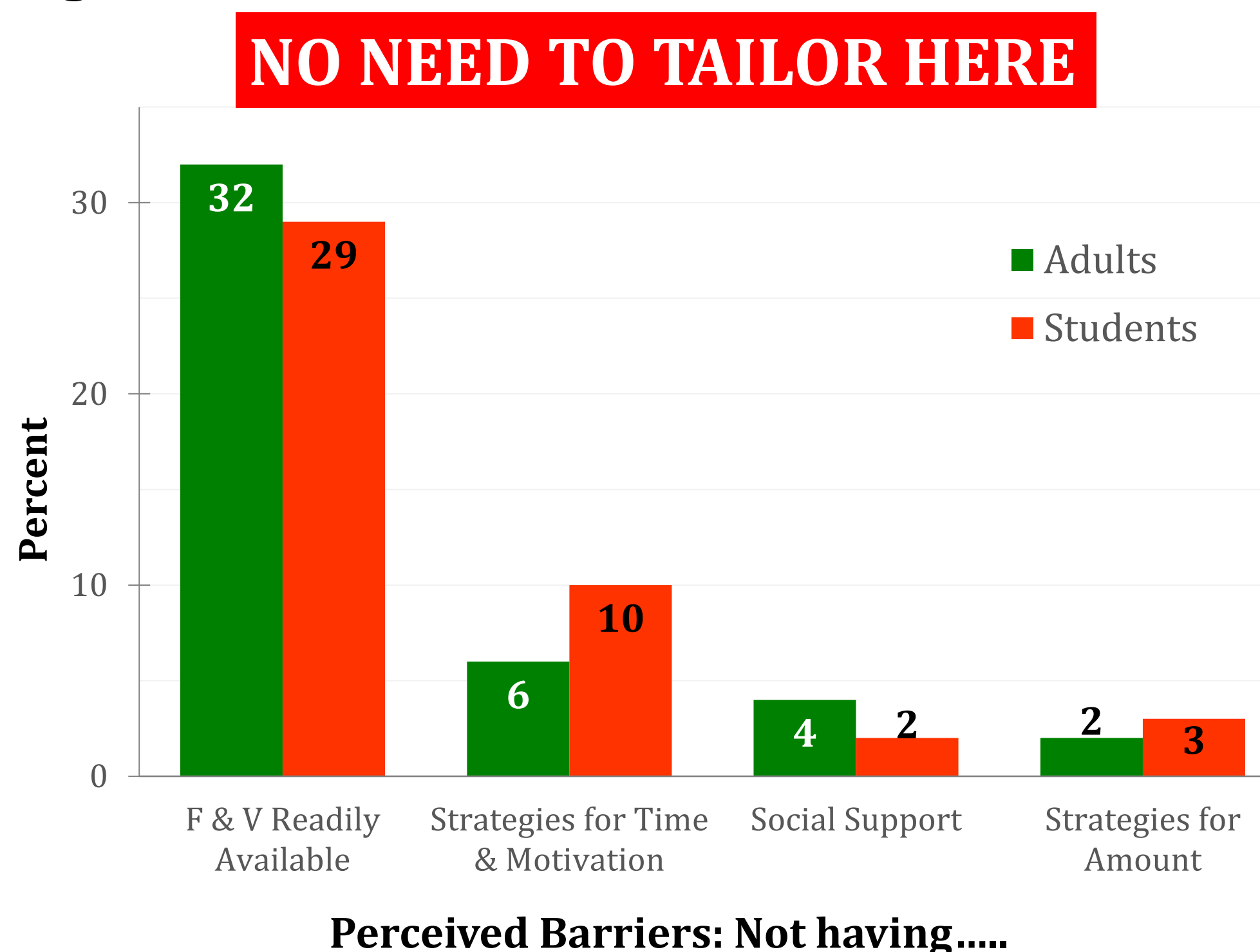


Table 2: Demographic Characteristics of Participants

	Adults (n=182)		Students (n=221)	
	Frequency or Mean	%/or SD	Frequency or Mean	% or SD
Age (Years) [†]	44	11	13	0.65
Gender: Female	141	76	113	51
Ethnicity: White	153	86	208	94
Marital Status: Married [#]	124	68	-	-
Education				
High School	18	10	-	-
College	110	64	-	-
Graduate School	54	30	-	-

[†]Age are Means & SDs; all others are frequencies & percentages

[#]Married includes living with partner

What they said.....

Not liking or enjoying:

Adults: I don't like lots of different fruits; OR I only like broccoli and spinach if it is fixed right.

Students: I don't like a lot of the green vegetables that my mom buys OR Well, if it's stuff I didn't like to eat; would be hard to force it down my throat.

Having to eat them alone:

Adults: Wanting to, or eating other things.

Students: Not having other stuff to eat with it OR eating it straight with nothing on it.

Not having enough time:

Adults: Lack of time; you have to have time to do it (and prepare your lunch....).

Students: Having other stuff to do OR Not having time to prepare the dish.

Having a high cost:

Adults: Only thing that would make it hard is that I don't have much money OR I just bypass fruit; sometimes I think fruit is expensive.

Students: Money is an issue OR how much it costs buying all the fruit.

Having to prepare them:

Adults: The fact that I'd have to peel them, inconvenient.

Students: The junk food is easier to fix and eat.

Limitations

- Convenience sample of a predominantly non-Hispanic White population.
- Adults and students were not from the same family.
- Detailed comparisons were not possible since questions were open-ended, it was only possible to compare percents who mentioned response category.
- Additional large scale research with close-ended items are needed to provide quantitative data for more advanced analyses to confirm and clarify the results.

Findings

- For five of the nine categories of barriers, the percent mentioning each category differed by stage of life.
 - More adults than students mentioned *not having enough time, high cost and having to prepare them.*
 - More students than adults mentioned *not liking or enjoying and not having to eat them alone.*
- However, for the other four categories, adults and students were not different: *not having F&V readily available, not having strategies for time and motivation, not having social support, and not having strategies for amount.*

Implications

- For practitioners, an RAA elicitation may be an effective method to identify beliefs to address to encourage F&V consumption.
- Furthermore, this theory can be used to determine when we need to tailor programs based on stage of life.
- In this case, interventions that make F&V more available are likely to be successful for both adults and middle school students.
- These findings suggest that interventions to encourage F&V consumption among adults need to address cost, help deal with the time it takes to prepare F&V, or provide ways to make more ready-to-eat F&V available.
- Similarly, to encourage F&V consumption among students, the intervention needs to address their liking and enjoyment. This can include:
 - serving F&V that they like; and
 - having more variety to expose them to additional ones that they may like.

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