

EVALUATING COLLEGE STUDENTS' HEALTH LITERACY AND HOW IT AFFECTS THE WAY THEY PERCEIVE INFORMATION CONCERNING MASK-WEARING IN THE COVID-19 PANDEMIC

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To some, masks communicate a belief in medical science and a desire to protect one's neighbor from contagion. To others, a mask communicates oppression, government overreach, and a skepticism toward established scientific principle..” (Ike et al., 2021).

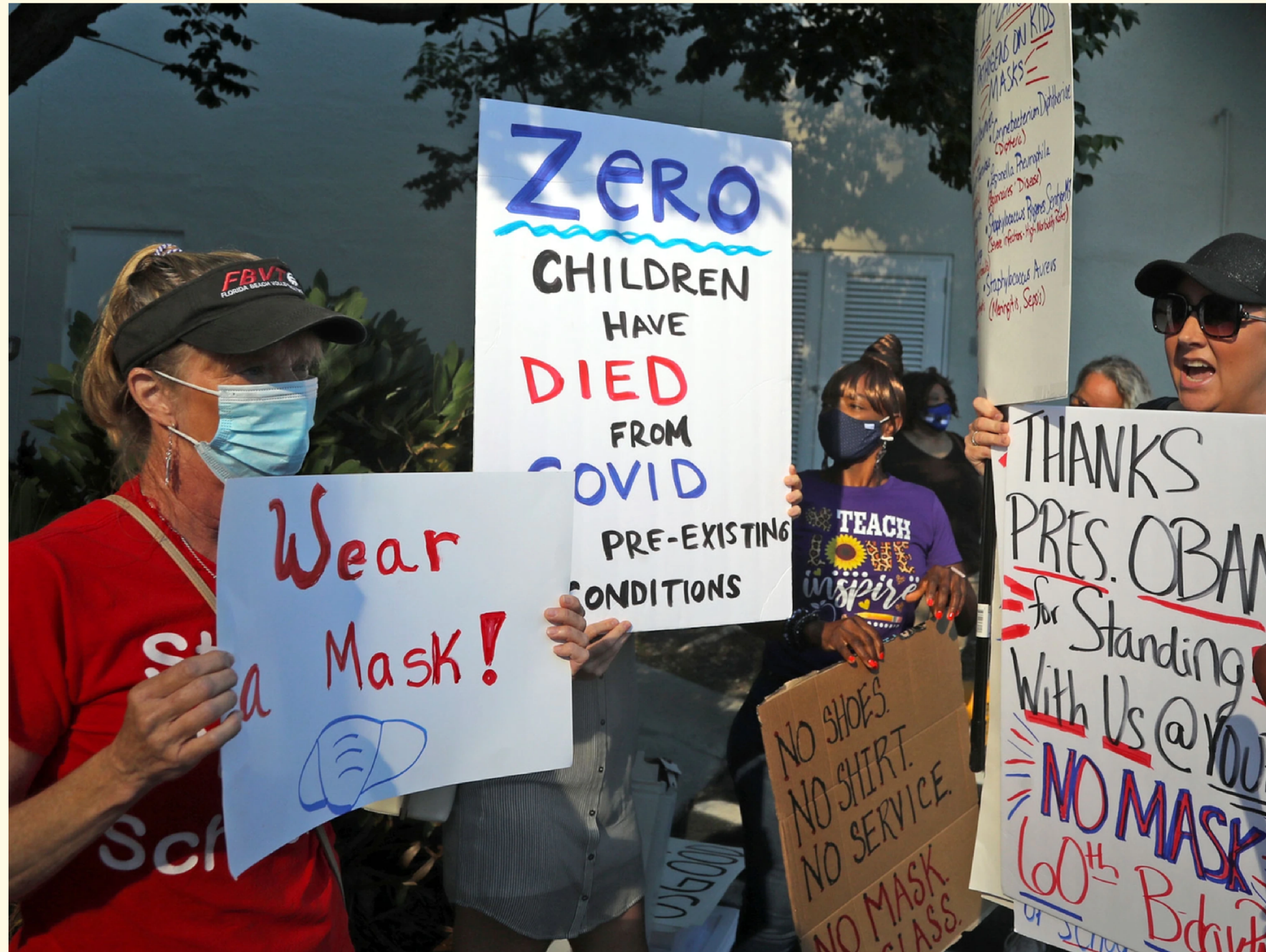


Figure 1. Protesters with opposing mask signs by Amy Beth Bennet, SOUTH FLORIDA SUN-SENTINEL VIA AP. Retrieved from <https://www.nationalgeographic.com/science/article/as-kids-head-back-to-school-battles-over-masks-are-pitting-parents-against-governors> Copyright 2021 by National Geographic.

INTRODUCTION

–Misinformation spread throughout the pandemic has created many opinions about mask-wearing among the public.

–Health literacy is a large factor in preventing the spread of misinformation.

–Is there a correlation between one's level of health literacy and their knowledge and attitudes towards masks? Do demographics and psychographics come into play?



WHAT IS HEALTH LITERACY?

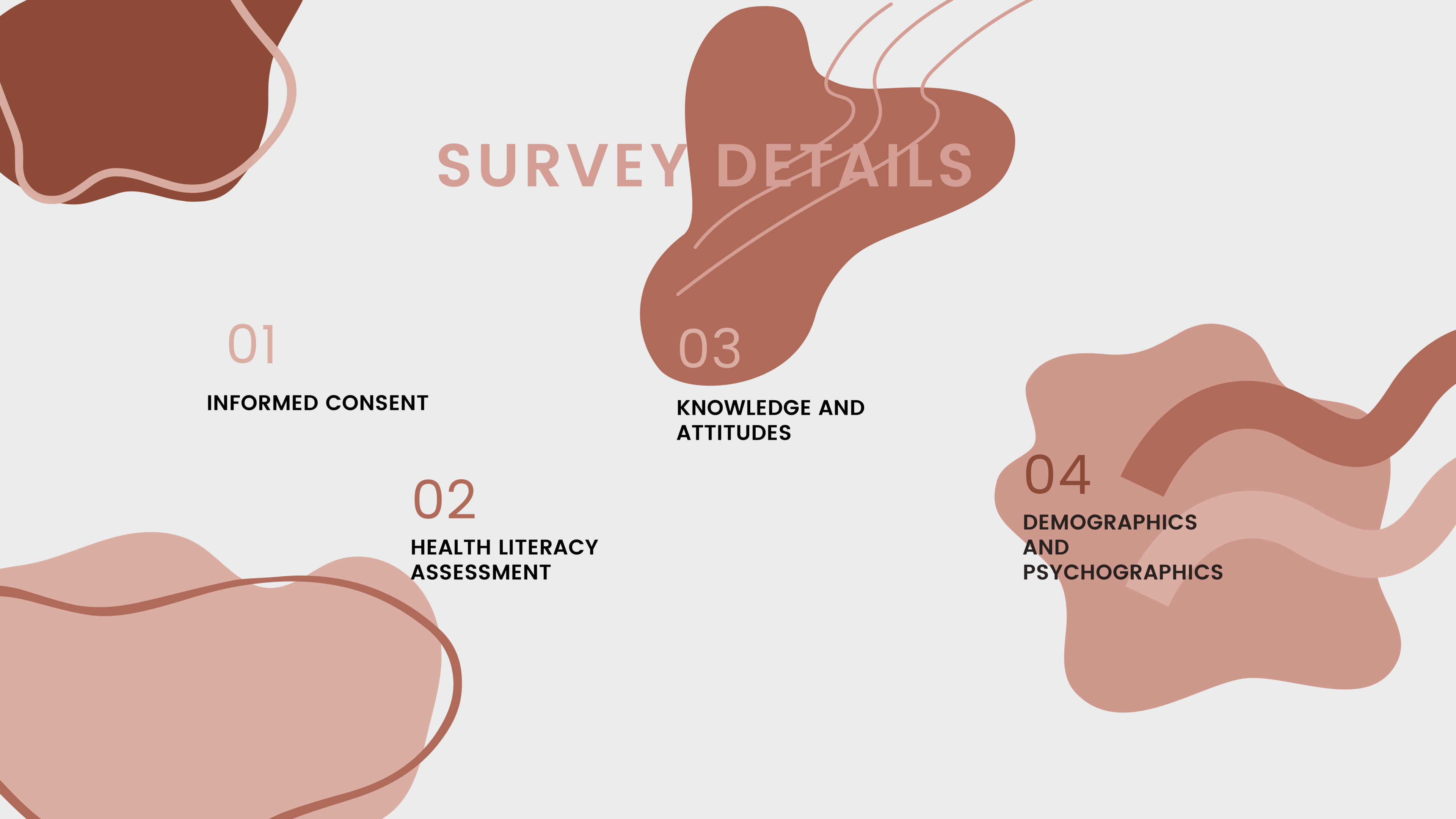


- The extent that one is able to differentiate information related to health and wellness and incorporate it into their own knowledge for decision-making (Health Literacy in Healthy People 2030, n.d.)
- Relating to pandemics, it's a relatively new field of research!
- Colleges in particular can benefit from increased health literacy.

DOES MASK WEARING ACTUALLY WORK?

- One of the key factors to decreasing the spread of COVID-19
- Effective in decreasing hospitalization rates associated with COVID-19 (Joo et al., 2021)
- Covid-19 cases decreased overall in the counties with a mask mandate, and Covid-19 cases increased overall in counties without a mask mandate (Van Dyke et al., 2020).
- Many factors influence how likely someone is to wear a mask (Banker & Park, 2020; Haischer et al., 2021; Ike et al., 2021; Kramer, 2020)





SURVEY DETAILS

01

INFORMED CONSENT

03

**KNOWLEDGE AND
ATTITUDES**

02

**HEALTH LITERACY
ASSESSMENT**

04

**DEMOGRAPHICS
AND
PSYCHOGRAPHICS**

Nutrition Facts

Serving Size $\frac{1}{2}$ cup
Servings per container 4

Amount per serving

Calories 250   Fat Cal 120

%DV

Total Fat 13g 20%

Sat Fat 9g 40%

Cholesterol 28mg 12%

Sodium 55mg 2%

Total Carbohydrate 30g 12%

Dietary Fiber 2g

Sugars 23g

Protein 4g 8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Score Sheet for the Newest Vital Sign Questions and Answers

READ TO SUBJECT: This information is on the back of a container of a pint of ice cream.

ANSWER CORRECT?

yes no

1. If you eat the entire container, how many calories will you eat?

Answer: 1,000 is the only correct answer

2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?

Answer: Any of the following is correct: 1 cup (or any amount up to 1 cup), Half the container. Note: If patient answers "two servings," ask "How much ice cream would that be if you were to measure it into a bowl."

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?

Answer: 33 is the only correct answer

4. If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

Answer: 10% is the only correct answer

READ TO SUBJECT: Pretend that you are allergic to the following substances: Penicillin, peanuts, latex gloves, and bee stings.

5. Is it safe for you to eat this ice cream?

Answer: No

6. (Ask only if the patient responds "no" to question 5): Why not?

Answer: Because it has peanut oil.

Interpretation

Number of correct answers:

Score of 0-1 suggests high likelihood (50% or more) of limited literacy

Score of 2-3 indicates the possibility of limited literacy.

Score of 4-6 almost always indicates adequate literacy.

KNOWLEDGE

- 6 statements with 5-point Likert scale based on participants' level of confidence (from no trust to full confidence)
- response considered correct if the participant answered 4 or 5 and incorrect if they answered 1-3
- adequate level of knowledge of masks: subject answered 5 out of 6 statements correctly



ATTITUDES

- 7 statements with 5-point Likert scale based on how often (never to always) the participants' complied to mask suggestions/requirements
- answers 4 and 5 was considered correct and 1-3 was considered incorrect
- 6 out of 7 statements answered correctly will indicate an adequate attitude toward masks

DEMOGRAPHICS/PSYCHOGRAPHICS

- AGE
- GENDER
- RACE
- POLITICAL LEANING
- AFFECTED BY COVID-19
- SOURCE OF INFO (TV, RADIO, PODCASTS, PRINT, NEWS WEBSITES/APPS, SOCIAL MEDIA)
- PERSONAL IMPORTANCE OF COVID -19 NEWS

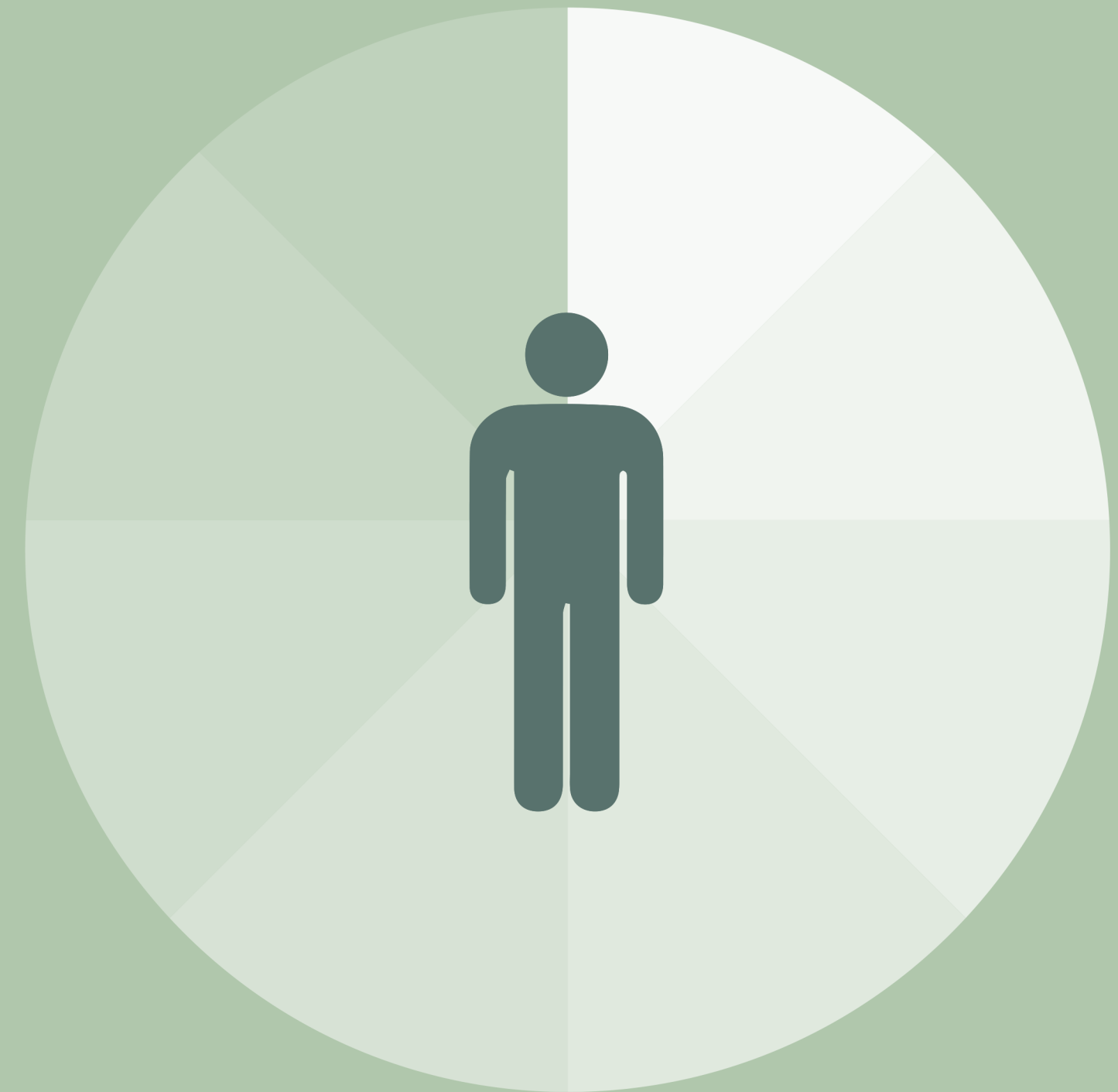


RESULTS

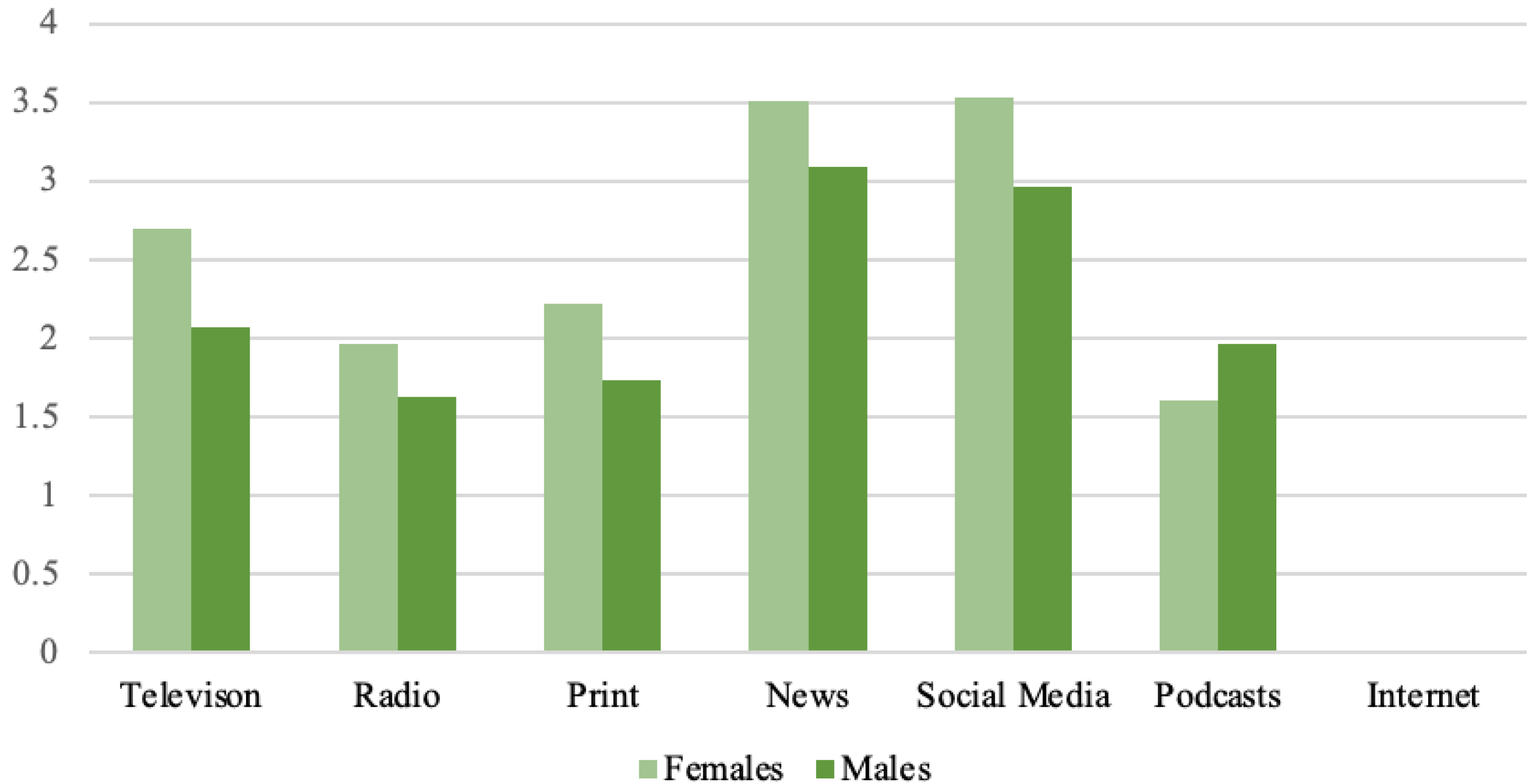
- Health literacy did NOT have a significant effect on one's knowledge or attitudes towards masks!

- Females were more likely to wear masks than males ($p=0.0051$; 0.00494).

- Democrats, Independents, and those with no political leaning had a higher likelihood of adequate knowledge of masks than Republicans ($p=0.0117$).

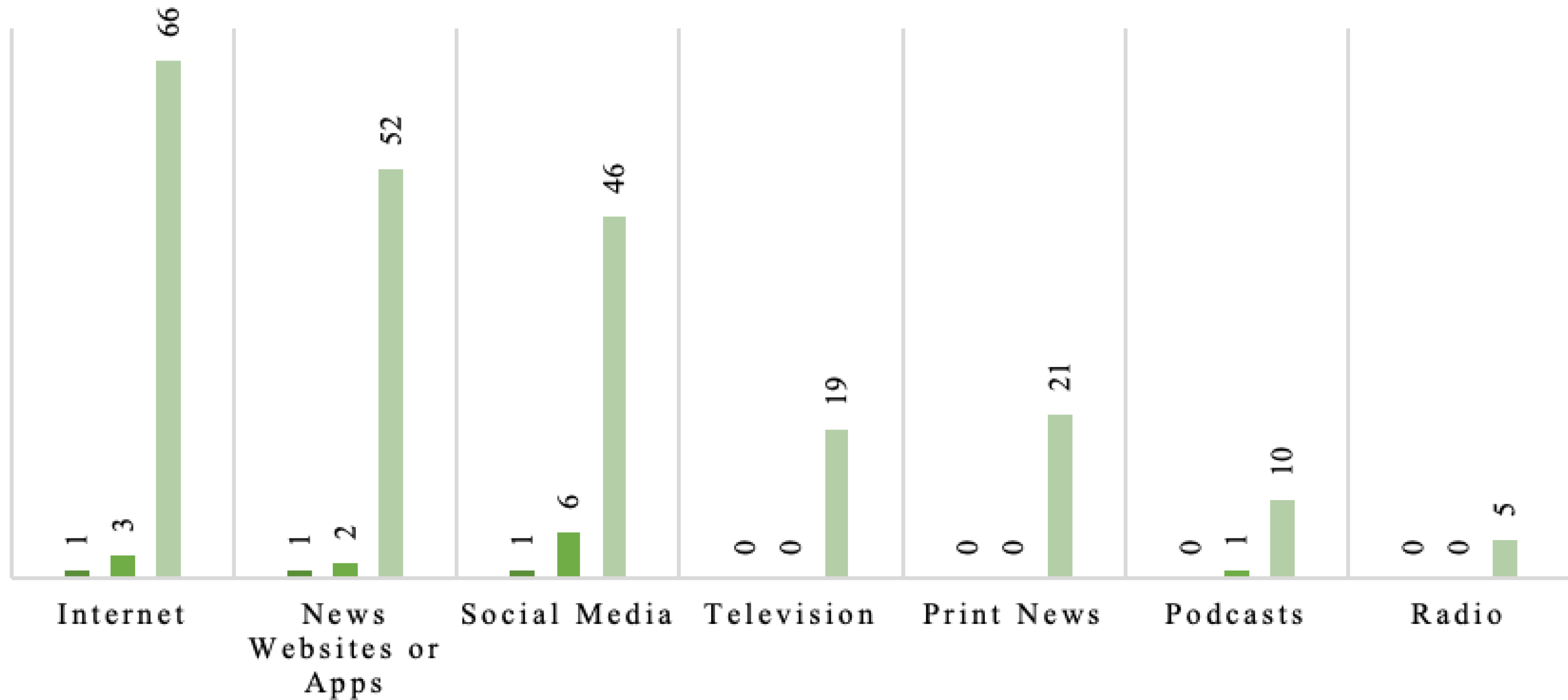


Gender Differences in Sources of Information Concerning COVID-19



Health Literacy and Sources of Information

■ High Prob. Of Low Literacy ■ Low Prob. Of High Literacy ■ High Prob. Of High Literacy



DISCUSSION AND RECOMMENDATIONS

- Was it the wrong timing?
- Different population, different results?
- Is there a bigger influence on mask-wearing than just health literacy?

FUTURE RESEARCH

- The effect of information sources on the spread of misinformation.



ULTIMATELY, how can
more lives be saved in
future public health
crises?



References

Banker, S., & Park, J. (2020). Evaluating prosocial COVID-19 messaging frames: Evidence from a field study on Facebook. *Judgment & Decision Making*, 15(6), 1037–1043.

Centers for Disease Control and Prevention. (n.d.). Your guide to masks. Centers for Disease Control and Prevention. Retrieved October 23, 2021, from <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-facecoverings.html#:~:text=Everyone%20should%20wear%20a%20mask,mask%20in%20public%20indoor%20settings>.

Haischer, M. H., Beilfuss, R., Hart, M. R., Opielinski, L., Wrucke, D., Zirgaitis, G., Uhrich, T. D., & Hunter, S. K. (2020). Who is wearing a mask? Gender-, age-, and location-related differences during the COVID-19 pandemic. *PloS One*, 15(10), e0240785.

Health literacy in healthy people 2030. Health Literacy in Healthy People 2030 - Healthy People 2030. (n.d.). Retrieved September 23, 2022, from <https://health.gov/healthypeople/priority-areas/health-literacy-healthy-people-2030>

Hornik, R., Kikut, A., Jesch, E., Woko, C., Siegel, L., Kim, K. (2021). Association of Covid-19 misinformation with face mask wearing and social distancing in a nationally Representative us sample, *Health Communication*, 36(1), 6-14, <https://doi.org/10.1080/10410236.2020.1847437>

Ike, J., Bayerle, H., Logan, R., & Parker, R. (2021). Face masks: Their history and the values they communicate. *Journal of Health Communication*, <https://doi.org/10.1080/10810730.2020.1867257>

Joo, H., Miller, G. F., Sunshine, G., Gakh, M., Pike, J., Havers, F. P., Kim, L., Weber, R., Dugmeoglu, S., Watson, C., & Coronado, F. (2021). Decline in COVID-19 hospitalization growth rates associated with statewide mask mandates - 10 States, March-October 2020. *MMWR. Morbidity and Mortality Weekly Report*, 70(6), 212–216.

Kanu, F. A., Smith, E. E., Offutt-Powell, T., Hong, R., Dinh, T.-H., & Pevzner, E. (2020). Declines in SARS-CoV-2 Transmission, Hospitalizations, and Mortality After Implementation of Mitigation Measures- Delaware, March-June 2020. *MMWR. Morbidity and Mortality Weekly Report*, 69(45), 1691–1694.

Nature Publishing Group. (2020, October 23). Modeling covid-19 scenarios for the United States. *Nature News*. Retrieved November 4, 2022, from <https://www.nature.com/articles/s41591-020-1132-9>

Kramer, S. (2020, October 20). More Americans say they are regularly wearing masks in stores and other businesses. *Pew Research Center*. Retrieved November 1, 2021, from <https://www.pewresearch.org/fact-tank/2020/08/27/more-americans-say-they-are-regularly-wearing-masks-in-stores-and-other-businesses/>.

Shah, L. C., West, P., Bremmeyr, K., & Savoy-Moore, R. T. (2010). Health literacy instrument in family medicine: the “newest vital sign” ease of use and correlates. *Journal of the American Board of Family Medicine*, 23(2), 195–203. <https://doi.org/10.3122/jabfm.2010.02.070278>

Silva, M. J., & Santos, P. (2021). The impact of health literacy on knowledge and attitudes towards preventive strategies against COVID-19: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(10), 5421. doi:10.3390/ijerph18105421

Taylor, S., & Asmundson, G. J. G. (2021). Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PloS One*, 16(2), e0246317.

U.S. Department of Health and Human Services, N. I. of H. (n.d.). Newest Vital Sign - English - NVS. Health Literacy Tool Shed. Retrieved December 9, 2021, from <https://healthliteracy.bu.edu/nvs>.