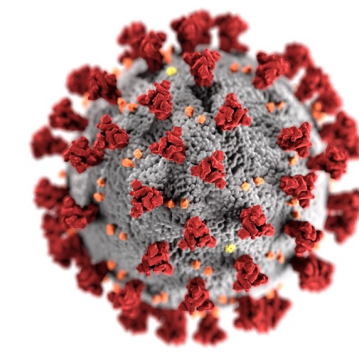


## Introduction



- Vaccine hesitancy can lead to diseases outbreaks (measles, pertussis, poliomyelitis).
- The Corona Virus disease (COVID-19) is the recent example of a new disease that turned into a pandemic.
- COVID-19 is “a public health emergency of international concern”.
- COVID-19 damage around the world - 223 countries and territories: 223,022,882 confirmed cases; 4,602,515 confirmed deaths as of September 10, 2021.
- Healthcare workers play a significant role in shaping public opinion.
- The change in their attitude towards the COVID-19 immunization may have a huge impact on general population view and lead to increasing vaccination rates.

## Background/Significance

- Vaccine hesitancy is “a delay in acceptance or refusal of vaccination despite the availability of vaccination services”.
- One of ten threats to global health in 2019.
- Immunization prevents 2-3 million deaths every year; 1.5 million deaths **could be avoided**.
- Slow pace in the U.S. until Jacobson versus Massachusetts case.
- The “Cutter” incident (1955) and MMR scandal (1998).
- The U.S. COVID-19 damage: 40,330,381 confirmed cases and 649,292 deaths from 1/03/20 to 9/10/21.
- **Financial Burden:** vaccination of 4 million people saves \$14 billion in direct costs and \$69 billion in indirect costs; 5 years of pneumonia vaccine use saved \$112,000 per person; meningococcal vaccine saved \$551 million in direct costs and \$920 million in indirect costs.
- **Burdens of COVID-19 Vaccines Hesitancy:** unpredictable disease outcomes, mental health (40% versus 11%), unemployment claims (695,000 versus 60 million), treatment of 33 ICU patients costs \$80 million/year, treatment of all mentally ill patients costs \$1.6 trillion/year, 30 million tests weekly cost \$75 billion and \$100 billion for contact tracing.

## Most Common Barriers for All Vaccines Hesitancy

- Concerns related to vaccine safety (side effects, long-term complications).
- Short intervals between vaccine and multiple injections.
- Vaccines’ fast approval and vaccines recall.
- Mandatory vaccination.
- Shared-decision making.
- Demographics: race, socioeconomic status, education.
- Underestimation of vaccine-preventable diseases complications.
- Media.
- Lack of knowledge.
- Distrust in healthcare workers and the healthcare system.
- Skepticism towards immunization and past personal experience.
- Religion, personal beliefs, rejection of traditional medicine.

## Quick intervention is needed for population protection!!!!

## Methods

**Design:** quasi-experimental

**Setting:** privately-owned home care agency in New Jersey

**Sample:** healthcare workers employed by the agency, who are at least 18 years old, able to read and understand English, and did not get a COVID-19 vaccine

**Study Interventions:**

- A 6-question demographic survey
- A 17-Likert-type scale question pre- and post-test vaccine hesitancy survey
- A custom-made 12-minute YouTube video *COVID-19 Myths vs. Facts*

**Measurable Outcomes:**

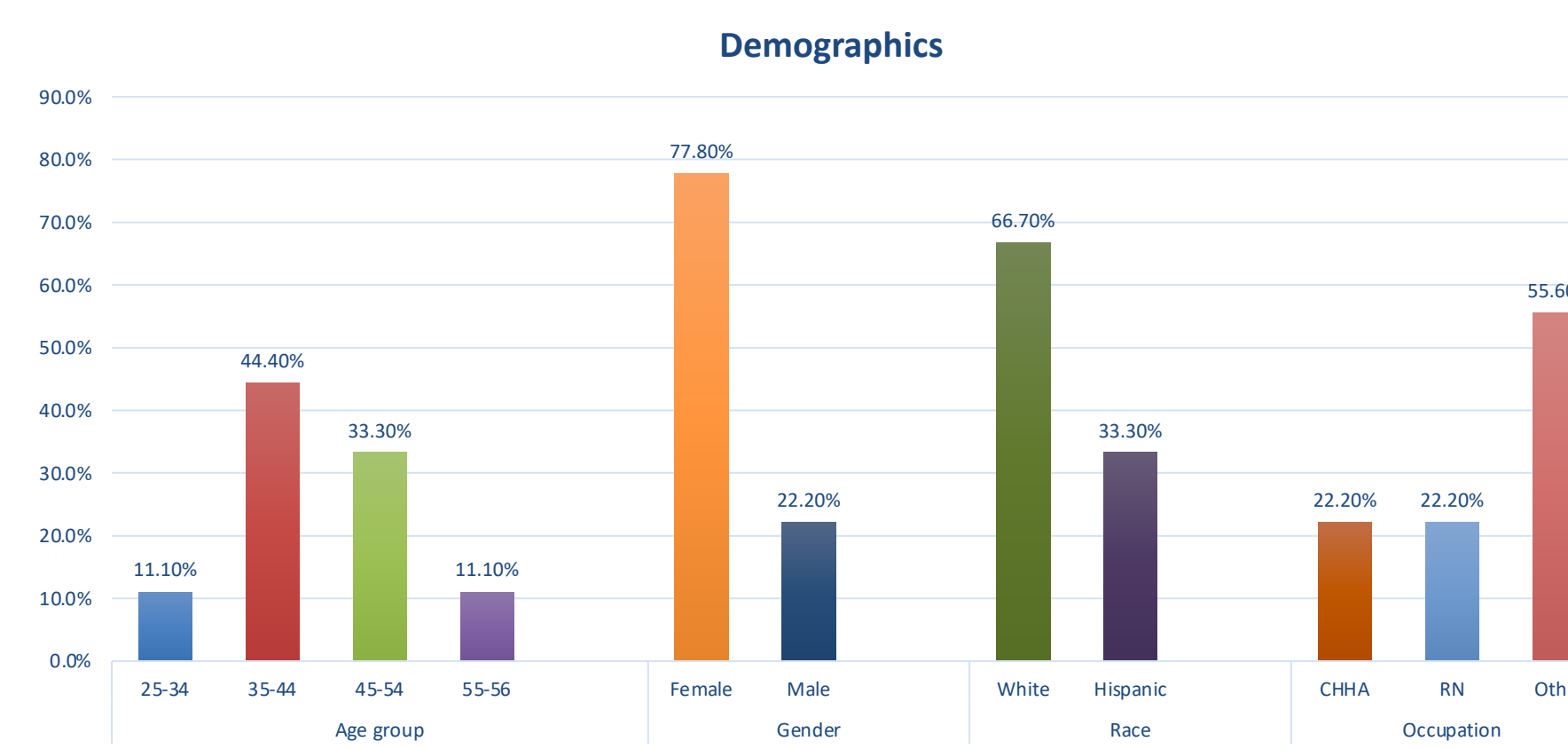
- Individuals’ attitude towards COVID-19 vaccines.
- Individuals’ knowledge about COVID-19 vaccines.

**Analysis:**

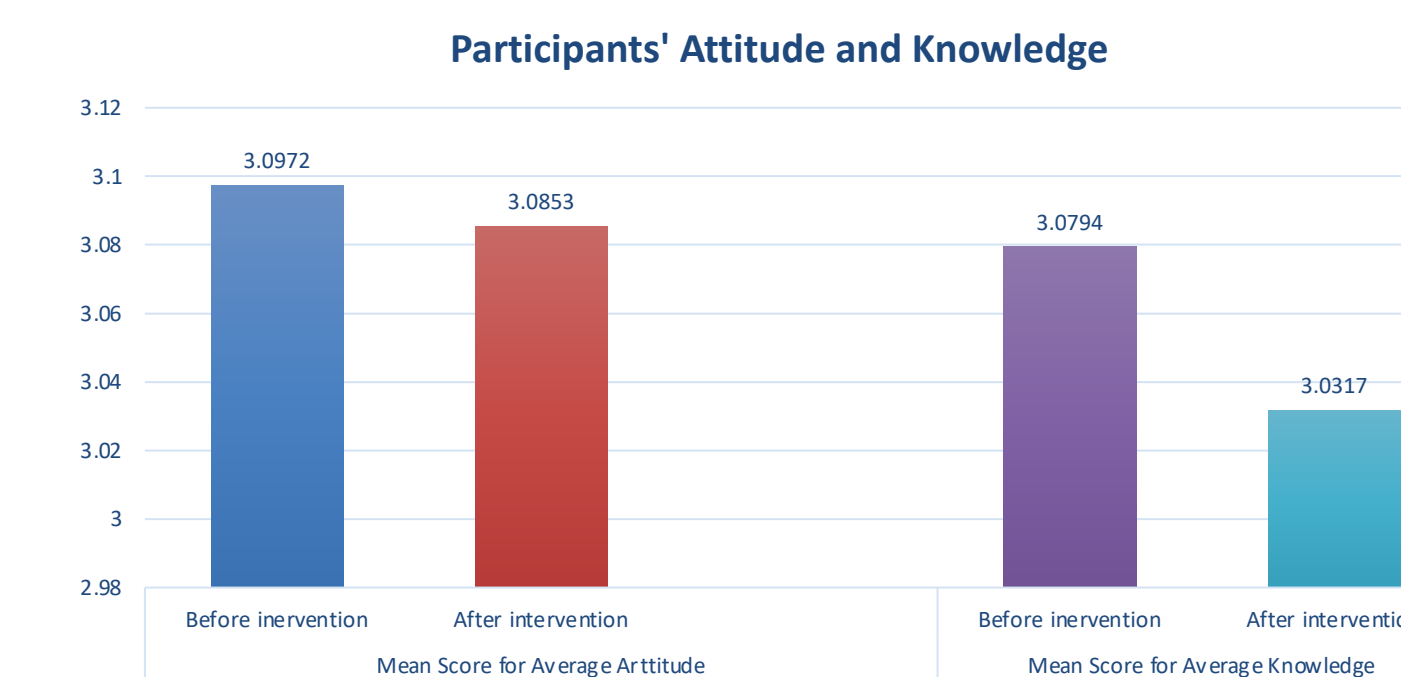
- Qualtrics for data collection
- Microsoft Excel and IBM SPSS for data analysis
- Descriptive statistics for sample analysis and vaccine type preference (frequency)
- Inferential statistics for outcome measure analysis (Fisher-Freeman-Halton test for assessing participants’ readiness to vaccinate question, Wilcoxon Signed-Ranks test for all other questions).
- $p \leq 0.05$  is statistically significant.

## Results

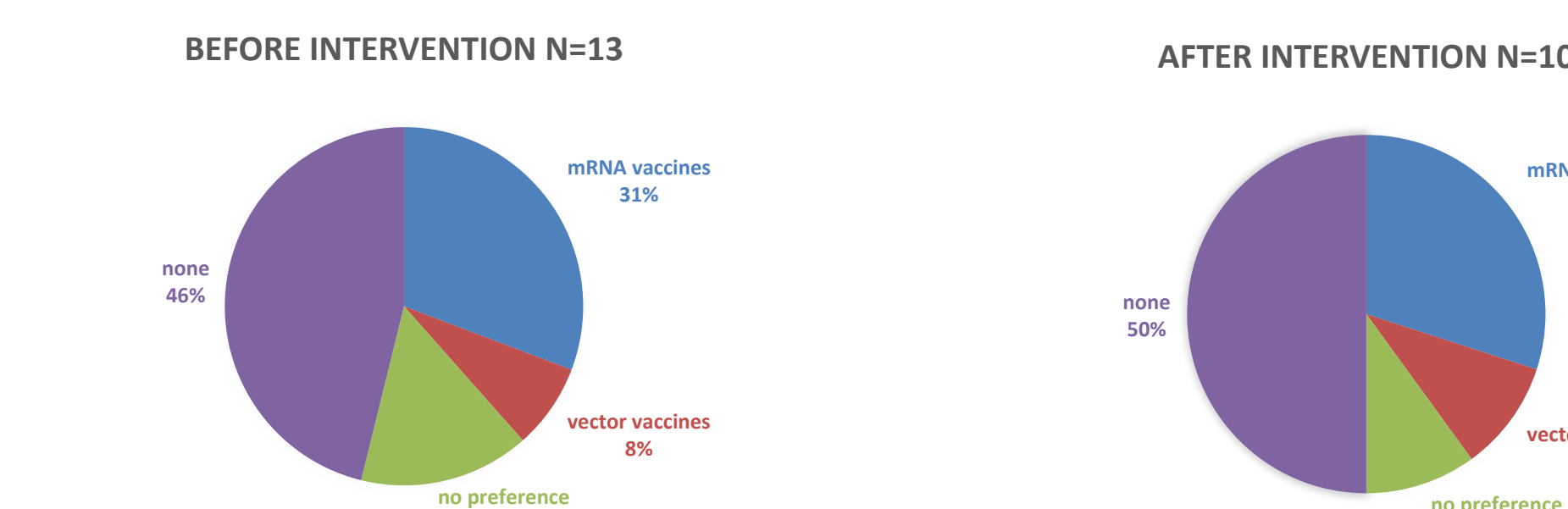
### Demographics



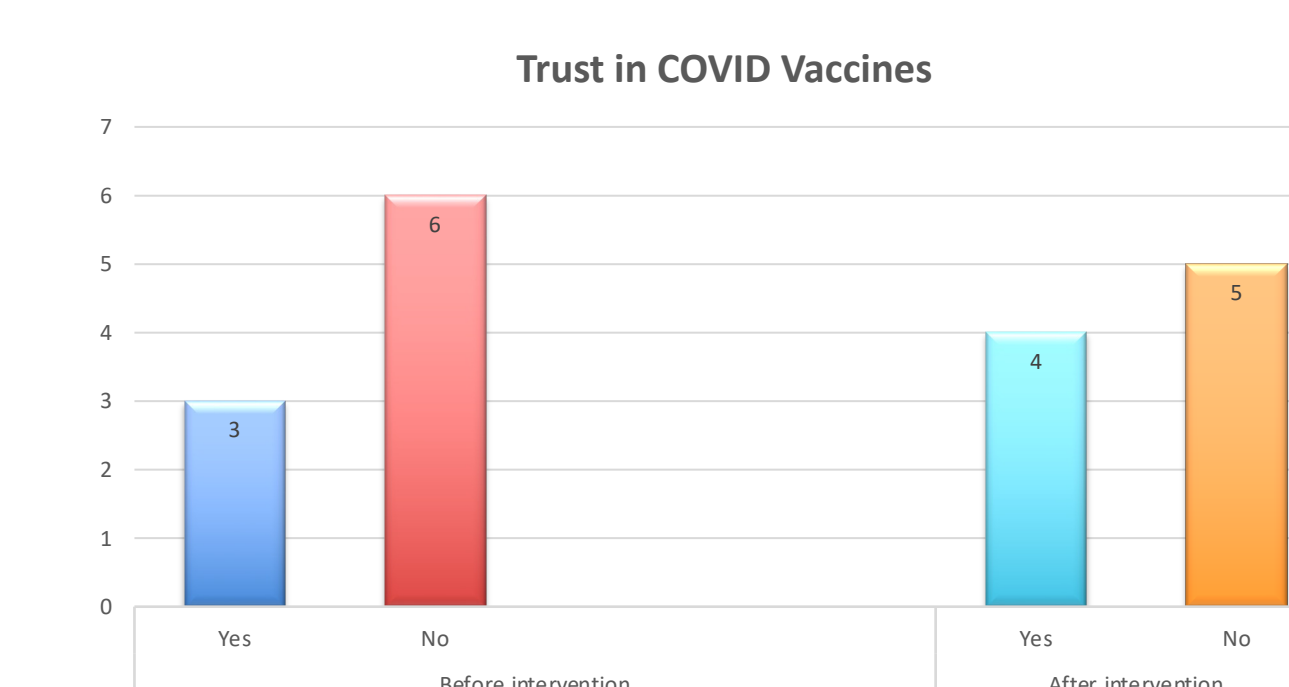
### Pre- and Post-test Participants’ Attitude and Knowledge compared by Mean Score



### Pre- and Post-test Participants’ Vaccine Preference



### Pre- and Post-test Participants’ Trust in COVID Vaccines (based on vaccine preference charts)



- 9 people participated in the study.
- $p = 0.905$  for average attitude;  $p = 0.553$  for average knowledge.
- Overall, mRNA vaccines preferred over vector vaccine.
- More people trust COVID vaccines post-intervention.
- $p = 0.008$  for participants’ readiness for immunization against COVID



## Discussion

The study outcomes did not demonstrate significant change in participants knowledge about COVID vaccines and their attitude towards them.

**Facilitating Factors:** COVID-19 is a hot topic, emphasis on COVID vaccines benefits, advice comes from experienced RN, sharing personal experience, use of the internet platform (YouTube).

### Barriers:

- **State and federal government COVID-19 vaccination mandate.**
- Waiting time for permission from the BBC News.
- Vaccine bias.
- Study perceived by participants as long or boring.

### Study Limitations:

- Small and biased sample.
- Late start of the project.
- Low response rate.
- 7 participants did not complete all 3 parts of the study.

### Potential Implications:

- **Practice/Quality/Safety:** The literature shows that evidence-based patients’ education using social media/internet platforms and advice to vaccinate coming from healthcare workers, especially nurses, reassures vaccines efficacy and safety.
- **Education:** Well-educated personnel is more confident making patient-provider conversation more efficient and trustful, which increases willingness to vaccinate based on literature review
- **Healthcare Policy:** Healthcare workers must be protected from COVID for their own safety and to decrease the spread of highly contagious disease.
- **Economy:** Despite the vaccines’ availability, the number of confirmed COVID cases/deaths goes up around the world. Need to continue research to address the gaps in knowledge, reassuring vaccines’ quality and safety.

## Reference List



## Intervention Video



## Contact Information

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