

Respiratory Protection Safety Culture Beliefs Among Healthcare Workers

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Background

- Respiratory protection programs (RPPs) in healthcare settings are likely to function optimally when safety culture is prioritized.
- As part of a broader effort to understand whether elastomeric respirators represent a solution to the problem of N95 respirator shortages experienced during pandemics, we studied safety culture beliefs among a population of healthcare workers (HCWs) using 3-different forms of respiratory protection (Figure 1).

Methods

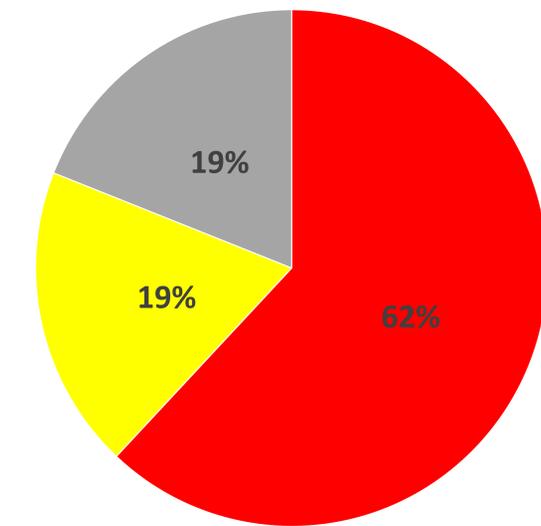
- HCWs enrolled in RPPs in a medical system where three different forms of respiratory protective devices (RPDs) were in use were surveyed. These included elastomeric half face respirators, powered air-purifying respirators (PAPRs) and N95 respirators (N95s). Participants completed an online questionnaire that addressed several domains including safety culture beliefs.
- Questions were adapted to address staff safety from the AHRQ Patient Safety questionnaire (Sorra 2010) and from prior safety culture research (Oedewald 2015).

Results

Demographic characteristics of survey respondents			
	n	%	
	n=1152	100%	
	n	%	
Gender			
Female	927	80%	
Age			
<30	344	30%	
30 - <40	370	32%	
40+	438	38%	
Race*			
Black/African American	227	20%	
White	726	63%	
All others	199	17%	
Job Category			
RN	552	48%	
RT	65	6%	
Provider (Attending or Resident Dr., N.P., P.A.)	216	19%	
Pt support/Other#	319	28%	
Site			
Urban, academic medical center	830	72%	
All other sites	322	28%	
Respirator type used			
N95	606	53%	
Elastomeric	280	24%	
PAPR	266	23%	
Primary Unit Setting			
Higher risk inpatient units	590	51%	
Lower risk inpatient units	357	31%	
Radiology/Lab/ambulatory/non-fixed	2015	18%	
Percentage of time wearing a respirator			
0-1%	597	52%	
1-10%	382	33%	
>10-25%	173	15%	
Tenure	mean in years	{SD}	
Years worked in Healthcare	13.49	(10.83)	

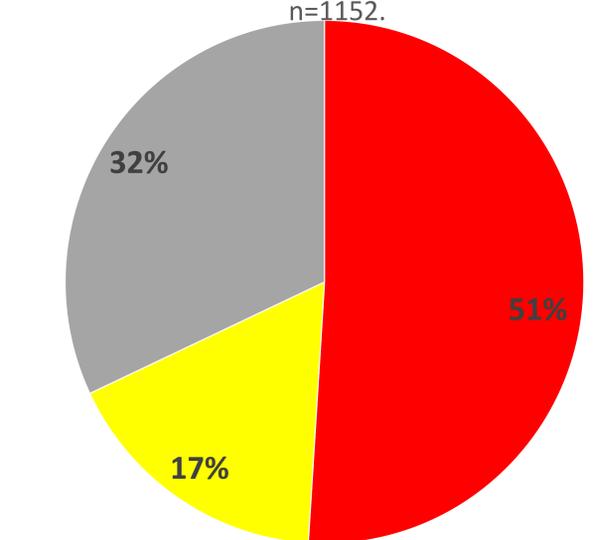
*Hispanic evaluated by ethnicity, not race, and grouped with white. No significant differences among groups. Only 35 hispanic participants in total.
 #Patient Support includes: Patient care technicians, nurse's aides, speech/occupational/physical therapists, licensed vocational nurses, housekeeping, maintenance/facilities/safety staff, pharmacy staff and administration/management staff.
 Dr. = doctor, N.P. = nurse practitioner, P.A. = physician's assistant

"Using respiratory protection interferes with patient care," n=1152



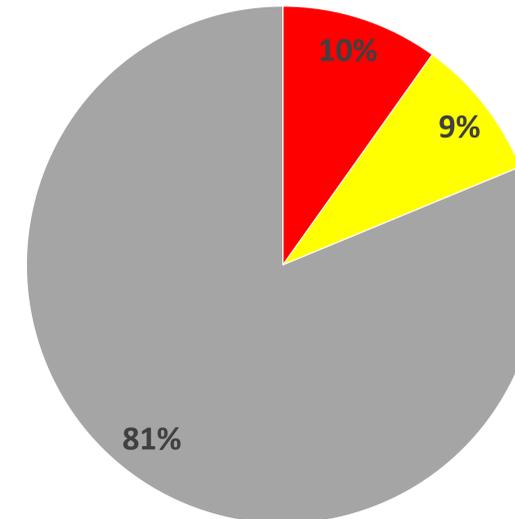
■ Strongly disagree or disagree ■ Neither agree nor disagree ■ Agree or strongly agree Figure 2

"It is inconvenient to use recommended PPE when taking care of patients on airborne precautions," n=1152.



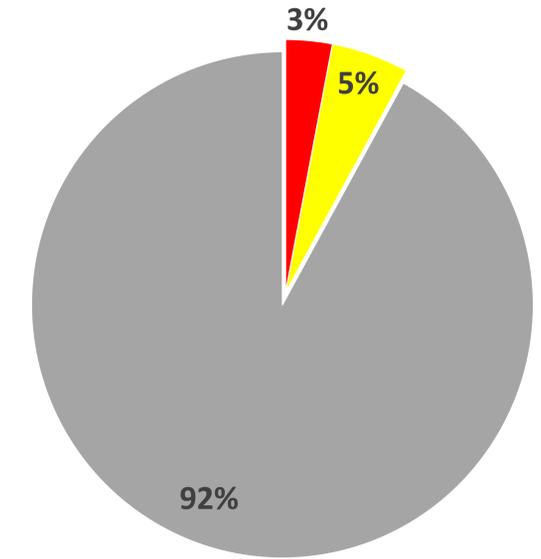
■ Strongly disagree or disagree ■ Neither agree nor disagree ■ Agree or strongly agree Figure 3

"Using my respirator when indicated is as important as responding to a patient emergency," n=1152



■ Strongly disagree or disagree ■ Neither agree nor disagree ■ Agree or strongly agree Figure 4

"The correct use of respirators when indicated is as important as proper medication," n=1152



■ Strongly disagree or disagree ■ Neither agree nor disagree ■ Agree or strongly agree Figure 5

Conclusions

- Most respondents report safety culture beliefs that support the importance of respiratory protection.
- It is unclear whether the type of RPD influences perceptions of safety culture.
- Future analyses will compare safety culture beliefs among different respirator user and occupational groups and evaluate safety culture beliefs associated with compliance with expected use.

Figure 1: RPDs in use among HCWs surveyed at 5 sites within a medical system: a) PAPR, b) N95, c) elastomeric respirator

