Hygiene-related behaviors during the COVID-19 pandemic among U.S. populations: A review

February 18, 2021
3:00 pm ET
Agenda

Welcome & Housekeeping

Presentation

Discussion and Q&A

Closing Remarks & Adjourn
Housekeeping

- All participants are in **listen-only mode**.

- You may submit your **questions** or **comments** at anytime through the online platform using the **Q&A feature**.

- The webinar will be recorded and available shortly after today’s webinar. Presentation slides, call notes and resources from today's presentation will be shared as permitted by the speakers.
Today’s Presenter

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Hygiene-related behaviors during the COVID-19 pandemic among U.S. populations: A review

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Division of Foodborne, Waterborne, and Environmental Diseases
February 18, 2021

cdc.gov/coronavirus

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Presentation Outline

- COVID-19 Prevention in Community Settings
- Handwashing Behavior
- Hand Sanitizer Behavior
- Hand Drying Behavior
- Cleaning and Disinfection Behavior
- Implications
Prevention in Community Settings

- Cover mouth and nose with a mask when around others not in your household
- Put at least 6 feet of distance between yourself and people who don’t live in your household
- Avoid crowds
- Avoid poorly ventilated spaces
- Wash hands often with soap and water for at least 20 seconds
  - If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol
- Cover coughs and sneezes using a tissue or the inside of the elbow
- Clean and disinfect frequently touched surfaces daily
- Participate in case investigation and contact tracing
- Monitor your health daily
- Get vaccinated when it is available to you

Prevention in Community Settings

- Cover mouth and nose with a mask when around others not in your household
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Community Hygiene-Related Behaviors

- During COVID-19 questions on recommended hygiene-related behaviors include:
  - Who is or is not engaging in them?
  - When are people engaging in them?
  - What do people know or think about them?
  - How are people engaging in them?
  - What influences people’s decisions to engage in them?
Handwashing
Handwashing Behavior

- Nationally representative random sample of 6,463 U.S. adults
- Porter Novelli Spring ConsumerStyles
- Data collected March 19 – April 9, 2020
- Respondents asked “What, if any, precautions are you taking to prevent coronavirus?” with “Washing hands with soap and water” as a response option
  - 93% reported frequent handwashing

Handwashing Behavior – By Sex

- Women more often reported frequent handwashing than men ($p=.004$)

Overall sample size for survey 6,463 U.S. adults

Handwashing Behavior – By Age

- Respondents in older age categories more often reported frequent handwashing than respondents in younger age categories.
- Respondents 60 years of age or older reported more frequent handwashing than those aged 18-29 ($p=.001$; 30-44, $p=.001$; 45-59, $p=.037$).

Overall sample size for survey 6,463 U.S. adults
No significant differences by race/ethnicity in prevalence of handwashing behavior.
Handwashing Behavior

- Sample of 5,000 U.S. adults
- Internet-based survey administered by Qualtrics
- Data collected June 24-30, 2020
- Asked about “In the last week, how frequently did you wash your hands with soap and water after touching high-touch surfaces in public?”
  - 78.5% of respondents frequently (always or often) washed hands

https://www.cdc.gov/mmwr/volumes/69/wr/mm6941a3.htm
Factors associated with more handwashing

- Female gender
- Older age
- Asian, non-Hispanic race/ethnicity
- Know someone who tested positive for SARS-CoV-2 (the virus that causes COVID-19)
- Higher level of concern about own risk for SARS-CoV-2
Handwashing Behavior Before and During COVID-19 Pandemic

- Nationally representative random sample of U.S. adults (n=3,624 in 2019; n= 4,053 in 2020)
- Porter Novelli Fall and Summer ConsumerStyles
- Data collected October 8-22, 2019 and June 10-25, 2020
- Respondents asked: “In which of these situations are you most likely to remember to wash your hands?”
  - After using the bathroom at home
  - After using the bathroom in public
  - After coughing, sneezing, or blowing one/s nose
  - Before eating at home
  - Before eating at a restaurant
  - Before preparing food at home

https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm
Respondents frequently reported washing hands before preparing food at home, after using the bathroom at home and in public (in both 2019 and 2020).

Respondents less commonly reported remembering to wash their hands before eating at home, before eating at a restaurant, and after sneezing, coughing or blowing nose (in both 2019 and 2020).

https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm
n=3,624 in 2019; n= 4,053 in 2020
Odds ratios were adjusted for year, gender, age, race/ethnicity, health status, region, household income, work status, education, metro status, household size, and marital status.

2019 referent year

https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm

Handwashing Behavior Before and During COVID-19 Pandemic

- Before eating at home
- Before eating at a restaurant
- Before preparing food at home
- After using the bathroom at home
- After using the bathroom in public
- After coughing, sneezing, or blowing nose
Handwashing Behavior Before and During COVID-19 Pandemic

- Largest increases in percentage of respondents remembering to wash hands were:
  - Before eating at home
  - Before eating in a restaurant
  - After coughing, sneezing, and blowing nose

- Despite improvements, <75% reported remembering to wash their hands in these three situations in 2020

https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm
n=3,624 in 2019; n= 4,053 in 2020
Handwashing Behavior Before and During COVID-19 Pandemic

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https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm
n=3,624 in 2019; n= 4,053 in 2020
Handwashing Behavior Before and During COVID-19 Pandemic

Before eating in a restaurant

- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years
- 65-74 years
- >=75 years

After respiratory symptoms

- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years
- 65-74 years
- >=75 years

https://www.cdc.gov/mmwr/volumes/69/wr/mm6940a2.htm
n=3,624 in 2019; n= 4,053 in 2020
Psychosocial Factors Associated with Handwashing Behavior

- Nationally representative random sample of 3,625 U.S. adults
- Porter Novelli Fall ConsumerStyles
- Data collected September 24 – October 10, 2020
- Respondents asked the question “What, if any, precautions are you taking to prevent coronavirus?” with “Washing hands with soap and water” as a response option
- Respondents asked additional questions to assess capability, opportunity, and motivation to wash hands, and perceived severity and susceptibility of COVID-19
Psychosocial Factors Associated with Handwashing Behavior

- 88.6% of respondent reported washing hands with soap and water to prevent COVID-19
- Factors associated with higher odds of self-reported handwashing to prevent COVID-19
  - Frequent handwashing is a habit in everyday life
  - Motivation to wash hands to prevent COVID-19
  - Concern about own risk for infection with COVID-19
  - Perceived severity of COVID-19
  - Behavioral control to prevent COVID-19

Overall sample size for survey 3,625 U.S. adults
Factors Associated with Handwashing Behavior

- In-depth interviews with 60 African American and Latino adults to explore experiences washing hands during the COVID-19 pandemic
- Interviews were analyzed through inductive and deductive thematic coding
- Preliminary themes
  - Key handwashing moments: after using the restroom and before eating
  - Motivators to handwashing: protecting self and loved ones from COVID-19
  - Barriers to handwashing: inconvenience, lack of access to sinks or soap when in public

Overall sample size for survey 3,625 U.S. adults
Hand Drying Behavior

- Sample of 502 U.S. adults
- Porter Novelli PN View 360
- Opt-in panel
- Data collected October 13-15, 2020
- Questions about
  - Influences on hand drying behaviors
  - Perceived risk of exposure to SARS-CoV-2 associated with hand drying methods
  - Preferences for hand drying behavior before and during the COVID-19 pandemic
Hand Drying Behavior - Preferences

- Which drying methods are available: 47%
- Not having to touch surfaces: 43%
- Cleanliness of the bathroom: 42%
- How clean the drying method is: 35%
- Ability to get my hands dry the fastest: 30%

Overall sample size for survey 502 U.S. adults
Hand Drying Behavior – Changes In Preferred Method

Before COVID-19
- 31% Using an electric hand dryer
- 56% Using paper towels
- 4% Wiping hands on own clothes
- 6% Shaking hands in the air
- 2% Other
- 4% No preference

During COVID-19
- 37% Using an electric hand dryer
- 45% Using paper towels
- 7% Wiping hands on own clothes
- 9% Shaking hands in the air
- 2% Other
- 2% No preference

Percent among respondents who wash hands after using a public restroom

Overall sample size for survey 502 U.S. adults
Alcohol-based hand sanitizer
Use of Hand Sanitizer

- Sample of 5,000 U.S. adults
- Internet-based survey administered by Qualtrics
- Data collected June 24-30, 2020
- Asked about “In the last week, how frequently did you use hand sanitizer after touching high-touch surfaces in public?”
  - 70.7% of respondents frequently (always or often) used hand sanitizer

https://www.cdc.gov/mmwr/volumes/69/wr/mm6941a3.htm
Hand Sanitizer Behavior – Determinants

- Factors associated with frequent use of hand sanitizer
  - Female gender
  - Older age
  - Asian, non-Hispanic race/ethnicity
  - Higher 2019 income
  - Know someone who tested positive or was hospitalized for SARS-CoV-2
  - Higher level of concern about own risk for SARS-CoV-2

https://www.cdc.gov/mmwr/volumes/69/wr/mm6941a3.htm
Overall sample size 5,000 U.S. adults
Determinants of Hand Sanitizer Use

- Sample of 504 U.S. adults
- Porter Novelli PN View 360
- Opt-in panel
- Data collected October 27-29, 2020
- Questions about
  - Frequency of use of alcohol-based hand sanitizer
  - Knowledge and skills to use hand sanitizer
  - Habit of using hand sanitizer
  - Barriers to use of hand sanitizer
Determinants of Hand Sanitizer Use – Beliefs

- It kills harmful germs on skin: 58%
- It makes me feel clean: 45%
- It is easy to use: 61%
- It is faster than washing my hands with soap and water: 40%
- It is convenient when I don’t have access to soap: 57%
- It dries out or irritates my skin: 40%
- It leaves a film on my skin or makes my skin feel sticky: 23%
- It smells bad: 21%
- It doesn’t get hands as clean as soap and water: 24%
- It is made with chemicals: 22%

Overall sample size 504 U.S. adults
Determinants of Hand Sanitizer Use – Cues

- Seeing other people use alcohol-based hand sanitizer: 47%
- Having alcohol-based hand sanitizer readily available: 63%
- Seeing informational signs about hand hygiene: 42%
- Seeing informational signs about coronavirus: 45%
- Seeing other people cough, sneeze, or blow their noses: 46%

Overall sample size 504 U.S. adults
Determinants of Hand Sanitizer Use – Knowledge

- Alcohol-based hand sanitizer must have at least 60% alcohol content to kill germs. 40%
- Alcohol-based hand sanitizer may not be as effective when hands are visibly dirty or greasy. 33%
- Alcohol-based hand sanitizer must be rubbed all over surfaces of your hands and fingers until hands are dry. 44%
- Hand sanitizers that do not contain alcohol are not effective at killing germs on hands. 31%
- Alcohol-based hand sanitizer can be used to clean surfaces like countertops. 29%

Overall sample size 504 U.S. adults
Psychosocial Factors Associated with Use of Hand Sanitizer

- Nationally representative random sample of 3,625 U.S. adults
- Porter Novelli Fall ConsumerStyles
- Data collected September 24 – October 10, 2020
- Respondents asked “What, if any, precautions are you taking to prevent coronavirus?” with “Use alcohol-based hand sanitizer” as a response option
- Asked questions to assess capability, opportunity, and motivation to use hand sanitizer and perceived severity and susceptibility of COVID-19
Psychosocial Factors Associated with Use of ABHS

- 71.5% of respondents reported using hand sanitizer to prevent COVID-19
- Factors associated with higher odds of self-reported use of hand sanitizer to prevent COVID-19
  - Capability to use ABHS to prevent COVID-19
  - Frequent use of ABHS habit in everyday life
  - Motivation to use ABHS to prevent COVID-19
  - Concern about own risk for infection with COVID-19
  - Perceived severity of COVID-19
  - Behavioral control to prevent COVID-19

Overall sample size 3,625 U.S. adults
Factors Associated with Use of Hand Sanitizer among African American and Latino Adults

- In-depth interviews with 60 African American and Latino adults to explore experiences using hand sanitizer during the COVID-19 pandemic
- Interviews were analyzed through inductive and deductive coding
- Preliminary themes include:
  - Key moments for using hand sanitizer were before eating, after going grocery shopping, after touching high-tough surfaces (e.g., door handles, grocery carts, elevator buttons)
  - Key motivator for respondents to use hand sanitizer was to protect themselves from COVID-19 especially when they are in public places
  - Respondents describe the convenience of using hand sanitizer as a facilitator
Cleaning and Disinfection
Disinfecting Behavior

- Nationally representative random sample of 6,463 U.S. adults
- Porter Novelli Spring ConsumerStyles
- Data collected March 19 –April 9, 2020
- Respondents asked “What, if any, precautions are you taking to prevent coronavirus?” with “Disinfecting surfaces at home/work often” as a response option
- 74.0% of respondents were disinfecting surfaces at home and work often to prevent COVID-19

Disinfecting Behavior – By Sex

- Women more often reported frequent surface disinfection ($p=0.001$)

Overall sample size for survey: 6,463 U.S. adults

[Graph showing 79% for females and 69% for males with a p-value of 0.001]
Disinfecting Behavior – By Age

- Respondents 45-59 years old more often reported frequent surface disinfection than those aged 18-29 ($p=.048$; 30-44, $p=.023$) years old
- Respondents 60 years of age and older more often reported frequent surface disinfection than those aged 18 to 29 years old ($p=.026$)

Overall sample size for survey 6,463 U.S. adults
Disinfecting Behavior – By Race/Ethnicity

- Non-Hispanic Blacks (p=.001) and Hispanics (p=.011), compared to non-Hispanic Whites more often reported frequent surface disinfection.
- Non-Hispanic Blacks (p=.001) and Hispanics (p=.005), compared to those identifying as Multiracial or other more often reported frequent surface disinfection.

Overall sample size for survey 6,463 U.S. adults

Sample of 502 U.S. adults
Porter Novelli PN View 360
Opt-in panel
Data collected May 4, 2020
Questions about
- Knowledge of safe cleaning behavior
- Cleaning practices

Knowledge and Practices Regarding Safe Household Cleaning and Disinfection for COVID-19 Prevention — United States, May 2020

On May 4, 2020, this report was posted as an MMWR Early Release on the MMWR website (http://www.cdc.gov/mmwr/).

A survey was designed to assess consumer intent to adopt proven practices to minimize exposure to illnesses and disemissions across the onset of the coronavirus disease 2019 (COVID-19) pandemic (1). However, data describing cleaning and disinfection practices within households in the United States are limited, particularly concerning those practices intended to prevent transmission of SARS-CoV-2, the virus that causes COVID-19, to provide additional and novel insights into the behaviors between groups, current efforts to enhance adherence to recommended practices, and new reports about the implications of COVID-19 on household cleaning and disinfection practices. The survey was administered to U.S. adults who had not had a survey in the previous 20 weeks of survey administration more eligible to participate. Open-ended and extended multiple-choice questions were employed to make the survey more representative of the U.S. population by gender, age, region, race, ethnicity, and education level. Participants were informed that their anonymous survey was eligible for either payment or rebates in the future.

Knowledge and Practices

Knowledge and Practices

Cleaning practices

Knowledge of safe cleaning behavior

Questions about
### Household Cleaning Knowledge

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good ventilation (air flow) is needed when using cleaning chemicals</td>
<td>73%</td>
</tr>
<tr>
<td>Household cleaning products should be kept out of reach of children</td>
<td>79%</td>
</tr>
<tr>
<td>Hand sanitizers should be kept out of reach of children</td>
<td>54%</td>
</tr>
<tr>
<td>Hands should be washed with soap and water after using household cleaning products</td>
<td>68%</td>
</tr>
<tr>
<td>When making a dilute bleach solution, only room temperature water should be used</td>
<td>23%</td>
</tr>
<tr>
<td>Bleach should not be mixed with vinegar</td>
<td>35%</td>
</tr>
<tr>
<td>Bleach should not be mixed with ammonia</td>
<td>58%</td>
</tr>
<tr>
<td>For some household cleaning products, eye protection should be used during use</td>
<td>64%</td>
</tr>
<tr>
<td>For some household cleaning products, gloves should be used during use</td>
<td>71%</td>
</tr>
</tbody>
</table>

[https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e2.htm](https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e2.htm)

Overall sample size 502 U.S. adults
### Household Cleaning Practices

- **Inhaled the vapor of household cleaners like bleach**: 6%
- **Drank or gargled a household cleaner**: 4%
- **Drank or gargled soapy water**: 4%
- **Drank or gargled diluted bleach solution**: 4%
- **Washed fruits, vegetables, or other food products with bleach**: 19%
- **Used household cleaner to clean or disinfect hands or bare skin**: 18%
- **Misted the body with cleaning spray or alcohol spray after being in public spaces**: 10%
- **Cleaned or disinfected grocery store items like bags or food packages**: 40%
- **Cleaned or disinfected packages or mail**: 44%
- **Increased frequency of home cleaning**: 60%

[https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e2.htm](https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e2.htm)

Overall sample size 502 U.S. adults
## Household Cleaning Knowledge and Practices

<table>
<thead>
<tr>
<th>Statement</th>
<th>Expressed Knowledge or Endorsement of Safety Precaution</th>
<th>Reported Engagement (by respondent or household member) in Safety Precaution in Previous Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>“For some household cleaning products, gloves should be used during use”</td>
<td>71%</td>
<td>49%</td>
</tr>
<tr>
<td>“For some household cleaning products, eye protection should be used during use”</td>
<td>64%</td>
<td>19%</td>
</tr>
<tr>
<td>“Good ventilation (air flow) is needed when using cleaning chemicals”</td>
<td>73%</td>
<td>38%</td>
</tr>
<tr>
<td>“Reading the label of household cleaning products prior to use can prevent injury”</td>
<td>86%</td>
<td>47%</td>
</tr>
<tr>
<td>“Homemade cleaning solutions should be properly labeled”</td>
<td>86%</td>
<td>54%</td>
</tr>
</tbody>
</table>


Slide shows weighted %, total sample size for survey is 502 U.S. adults.
Psychosocial Factors Associated with Frequent Home Cleaning

- Nationally representative random sample of 3,625 U.S. adults
- Porter Novelli Fall ConsumerStyles
- Data collected September 24 – October 10, 2020
- Respondents asked “What, if any, precautions are you taking to prevent coronavirus?” with response option “Increased home cleaning”
- Asked questions to assess capability, opportunity, and motivation to engage in frequent home cleaning and perceived severity and susceptibility of COVID-19
Psychosocial Factors Associated with Frequent Home Cleaning

- 36.9% of respondents reported increased frequency of home cleaning
- Factors associated with higher odds of self-reported frequent home cleaning
  - Capability to clean home to prevent COVID-19
  - Frequent cleaning at home is a habit in everyday life
  - Motivation to clean home to prevent COVID-19
  - Concern about own risk for infection with COVID-19
  - Perceived severity of COVID-19
  - Behavioral control to prevent COVID-19

Overall sample size 3,625 U.S. adults
Summary
Summary

- Room for improvement in hand hygiene-related behaviors
  - Young adults, males
- Gaps in knowledge and practices related to safe use of cleaning products
  - Disconnect between what people know and what they do
- Gaps in knowledge and practice related to use of hand sanitizers
  - Need for more messaging and education
- People are motivated to engage in hand hygiene-related behaviors because they see it as a way to protect themselves and family
  - Must have the capability and opportunity to engage in hand hygiene
- Range of factors influence engagement in hygiene related behaviors
  - Perceptions of severity and susceptibility of COVID-19, previous experience with COVID-19, reminders or cues to action, and access to supplies
- Concerns about fomites influence hand drying behavior
Implications and Next Steps
Implications

- Health communication and education efforts may need to focus on certain populations to address practice gaps
- Knowledge and practice gaps suggest messages should address mismatch
- Messages can be crafted to leverage psychosocial predictors of hygiene-related behavior such as perceived severity, susceptibility, behavioral control, capability, motivation, and opportunity
- To promote hand hygiene-related behaviors, need to go beyond health communication to address structural barriers (such as lack of access to hygiene supplies)
Next Steps

- Continue to monitor who is engaging in hygiene-related behaviors and identify changes over time
  - Examine impact of emerging variants and vaccines have on hygiene-related behaviors
- Disseminate new messages and materials to target groups with lower levels of behavioral engagement
  - And to groups engaging in less safe cleaning behaviors
- Identify strategies to increase access to hand hygiene supplies and infrastructure
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- Brittany Robinson
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- Rieza Soelaeman
- Kayla Vanden Esschert
- Deanne Webber
- Jonathan Yoder
Q&A Discussion

You may submit your questions or comments at anytime through the online platform using the Q&A feature.
Upcoming Webinars

**Thursday, February 25th 3pm:** COVID-19 Vaccination Stories from the Field: Local Health Department & Pharmacy Partnerships
Stay Engaged!

Stay tuned for future call and webinar announcements!


Connect with us via the Preparedness Inbox at: preparedness@naccho.org