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Are we being watched? A test of hand washing in public restrooms as communication behavior

David Dryden Henningsen
Mary Lynn Miller Henningsen
Northern Illinois University

Mary Braz
Westchester University

Elaine Davies
University of Missouri

Author's note: David Dryden Henningsen (Ph.D., J.D. University of Wisconsin) and Mary Lynn Miller Henningsen are associate professors and Mary Braz is an assistant professor. Elaine Davies is a graduate student. Correspondence should be directed to the first author at Department of Communication, Northern Illinois University, DeKalb IL 60115. e-mail: tm0dxh1@wpo.cso.niu.edu. Phone: 815-895-3633

Abstract

Hand washing behavior on a college campus was examined. It was hypothesized that normative pressure to wash ones hands would be greatest when one other person was present in a restroom. When no others were present or when multiple other individuals were present in the restroom, it was predicted that normative pressure would decrease. Support for this hypothesis was found for women's hand washing behavior but not for men's hand washing behavior. An arousal avoidance explanation is used to account for the inconsistent findings for men's hand washing.

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In their daily routines, people engage in thousands of communication acts. Although at times these behaviors may be mindless (Langer, 1989) our communication behaviors tend to be goal driven (Kellerman, 1992). Indeed, even some behaviors that may be perceived as mindless or as non-communicative may actually be communication acts intended to achieve specific goals. We propose that hand washing behavior in public restrooms represents such an act.

On the face of it, the decision to wash one's hands in a public restroom appears to be driven primarily by the instrumental goal of personal hygiene and would not be a communication act. Indeed, in modern times increased awareness of the benefits of hand washing and awareness of such may be expected. However, there are indications that people's hand washing behaviors change in the presence of others. Both Munger and Harris (1989) and Edwards et al. (2002) found that individuals were more likely to wash their hands when they believed others might observe their behavior. These findings imply that people use hand washing as a communication act. They convey a message that they are sanitary people, or at least not unsanitary ones.

One of the principle types of goals we seek to achieve using communication are self-presentational, or identity management, goals (e.g., Dillard, Segrin, & Hardin, 1989; Wilson, 1990). Although not exclusively so, individuals generally seek to be viewed by those around them as competent, likable, and socially appropriate.

We propose that hand washing behavior in public restrooms is, in part, driven by a self-presentational goal to be perceived as socially appropriate. In essence, when a person feels they may be the target of another's attention they may feel motivated to gain approval from that individual. To gain such approval, the person may act in what they perceive to be a socially acceptable manner. In this case, the change in behavior brought on by the desire to be viewed favorably by others would be referred to as *normative influence* (Deutsch & Gerard, 1955; Kaplan, 1989).

Factors that decrease the likelihood that others will form impressions of a person should reduce communication behaviors motivated by self-presentational goals. As noted, people tend to wash their hands less frequently when no one else is present (Munger & Harris, 1989; Edwards et al., 2002). To further test our prediction that hand washing serves self presentational goals, we propose that individuals should also be less inclined to wash their hands when more than one other person is present in a public washroom with them.

The idea that normative pressure would be decreased with increasing numbers of individuals in a restroom is consistent with social impact theory (Latane, 1981). Latane proposes that increasing the number of targets of influence should reduce the pressure felt by any single target. In essence, in a crowded restroom individuals can disappear among all the possible targets of attention.

Hypothesis One: People will spend more time washing their hands when one person is present than when they perceive they are alone or when there is more than one other present.

Sex difference. In addition to the presence of other individuals, Edwards et al. (2002) found evidence that women are more likely to wash their hands than are men. As Edwards et al. note, women may feel more normative pressure in this arena because, as

the primary child rearers in society, they are more responsible for communicating societal hygiene norms than are men. As such, women may be more prone to this particular instance of normative pressure.

Hypothesis Two: Women will spend more time washing their hands than men will.

Convenience. As the number of people in a washroom increase, we predict that normative pressure on individuals in the washroom should decrease reducing the tendency to engage in socially appropriate behaviors such as hand washing. However, it is also possible that increasing the number of people in a restroom increases the costs associated with washing ones' hands. If a sink is not readily available or if sinks are crowded, the reduced convenience involved in washing ones' hands reflects a cost of hand washing behavior. It is possible this added cost, and not reduced normative pressure, may be responsible for any changes in hand washing behavior with increased crowding. In essence, people should be more inclined to wash their hands when sinks are readily available to them. We explore this possibility with a research question.

Research Question: Do people spend less time washing their hands when there are fewer sinks available?

Method

Participants.

Individual behaviors were observed in public restrooms at a large Midwestern university. Two hundred thirty-seven males and 262 females were observed.

Procedures.

Undergraduate students in a research methods course served as trained observers. Observers were instructed to go to public restrooms on campus. They were instructed to observe the hand washing behaviors of individuals using the restrooms.

For some of the observations, observers were instructed to unobtrusively observe participants from a closed restroom stall. This process was intended to reduce the likelihood that participants would feel their behaviors could be monitored. In other conditions, the observers were instructed to act as though they were busy with some task (e.g., looking through a backpack) but to be plainly visible to the participants.

Measures

In each trip to a restroom, observers made a single observation. For each observation, observers recorded the amount of time in seconds the participant spent washing their hands. Observers recorded the amount of time from when the participant first turned on the water at a restroom sink until the participant made a noticeable movement away from the sink. Time spent drying hands was not recorded.

In addition to the time individuals spent washing their hands, observers also recorded the number of individuals visible in the bathroom to the participant ($M = 1.51$, $SD = 1.44$). Thus, individuals in stalls were not counted but all individuals other than the participant, including the observer unless the observer was in a stall, were tallied. Furthermore, for each participant the number of *open* sinks available to the participant when they first moved toward the sinks was recorded ($M = 3.42$, $SD = 1.49$).

Results

Presence of Others

In order to account for differences in cell sizes, a priori contrast analyses were performed employing the harmonic mean. A priori contrast coefficients, means, standard deviations and cell sizes are reported in Table One. The contrast coefficients were

designed to test the hypotheses. Overall, the contrast model reflecting the hypotheses was significant, $F(1, 493) = 25.86, p < .05$, partial $\mu^2 = .05$. Furthermore, the model produced a non-significant residual effect, $F(4, 493) = 2.62, p = .07$, partial $\mu^2 = .03$.

Table One: Contrast coefficients, means, standard deviations, and cell sizes.

	<u>A priori contrast coefficient</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Cell size</u>	<u>Post hoc contrast coefficient</u>
<i>Men</i>					
Alone	-1.5	3.51	4.43	73	-0.5
One other	0	3.14	4.03	63	-1
> one other	-1.5	4.81	6.00	101	-0.5
<i>Women</i>					
Alone	0.5	6.10	5.52	87	0.5
One other	2	8.18	9.79	61	1
> one other	0.5	7.53	6.90	114	0.5

Examination of the means indicates a potential problem with the proposed model. Men do not appear to display the predicted curvilinear trend. Clearly, men did not decrease the time they spent washing hands in the presence of more than one other person or when they felt they were alone compared to when they felt they were with one other. In addition, the residual effect size for the analysis is not trivial. A post hoc contrast model was examined to account for this problem (see Table One for post hoc contrast coefficients). The post hoc model was significant, $F(1, 493) = 40.17, p < .05$, partial $\mu^2 = .08$, and the residual was not significant and produced a trivial effect size, $F(4, 493) = 0.24, p > .05$, partial $\mu^2 < .01$. Overall, the post hoc model appears to provide better fit to the data.

The post hoc model was also tested excluding individuals who did not wash their hands. Means, standard deviations, cell sizes, and contrast coefficients are presented in Table 2. Munger and Harris (1989) excluded those who did not wash from their analysis of time spent hand washing and found no significant effect for the presence or absence of others. Overall, the post hoc model was significant, $F(1, 369) = 17.43, p < .05$, partial $\mu^2 = .05$, and the residual was not significant, $F(4, 369) = 0.11, p > .05$, and produced a trivial effect size, partial $\mu^2 < .01$.

Table Two: Contrast coefficients, means, standard deviations, and cell sizes excluding those who did not wash.

	<u>Mean</u>	<u>Standard Deviation</u>	<u>Cell size</u>	<u>Contrast coefficient</u>
<i>Men</i>				
Alone	7.11	3.75	36	-0.5
One other	4.71	4.12	42	-1
> one other	6.66	6.12	73	-0.5
<i>Women</i>			70	
Alone	7.59	5.16		0.5
One other	9.78	9.24	51	1
> one other	8.33	6.78	103	0.5

Convenience

When a restroom is crowded, the costs of washing hands should increase due to reduced convenience. The number of open sinks available to an individual provides a measure of restroom crowding that accounts for differences in the size of different restrooms. If increased costs are associated with decreased hand washing, a negative correlation should emerge between the number of open sinks and the amount of time people spend washing their hands. The correlation between time spent hand washing and the number of open sinks was small, $r = .01$, and not significant, $p > .05$. Apparently, convenience is not a primary drive influencing hand washing behavior.

Discussion

The results of the study provide some evidence that normative pressure affects hand washing behavior in public restrooms. Women spent less time washing their hands when no other person was present in a restroom than when one other person was present. This indicates that, for women, hand washing behavior is at least in part a communicative act intended to achieve self presentational goals.

Consistent with predictions based on social impact theory (Latane, 1981), women also spent less time washing their hands when more than one other person was present. We believe that this reflects a diffusion of normative pressure because of the increased number of possible targets.

Although it could be argued that increasing the number of individuals in a restroom discouraged hand washing by making the task more difficult, we found no

evidence to support this contention. The number of open sinks was unrelated to the amount of time people spent washing their hands.

Interestingly, men did not display the same pattern of behaviors as women. In fact, men spent less time washing their hands when only one other person was present than in any other condition. It is possible that increasing identifiability produced discomfort for men using the restroom. Using the restroom can be considered highly private behavior and men's lavatories tend to provide less personal privacy than do women's lavatories. Past research indicates the presence of others in the restroom produces physiological arousal in men (Middlemist, Knowles, & Matter, 1976).

It is possible that men will spend less time washing their hands when they experience higher levels of arousal. When men felt they were less identifiable, either because no one appeared to be present or because they could blend in to the crowd, they may have been more comfortable taking the extra time to wash their hands. In essence, in social impact theory terminology, when men are more likely to be a target of observation in a restroom they seek to retreat rather than to follow the normatively appropriate behavior.

The conclusions about men's hand washing behaviors are speculative. Although we found that men spent the least amount of time washing their hands when only a single other person is present in the restroom, we must be cautious when interpreting this effect. We did not hypothesize this pattern and the support we found for it was purely post hoc. Clearly this is an area where future research would be beneficial.

Health experts suggest that individuals should spend twenty seconds washing their hands after using the restroom, roughly the time it takes to sing *Happy Birthday*. In the present study, individuals tended to spend much less time on this act of personal hygiene. However, the study does indicate that normative influence may be able to promote greater attention to hand washing. Future studies need to explore how normative forces may be used to promote this pro-social behavior.

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