

# MATURE CONSUMERS' EVALUATIONS OF INNOVATIVE BATHING FIXTURES: THE AMERICAN RESULTS

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With normal age-related impairments, bathing may require more time and effort, resulting in stress, fear, and unsafe situations; may depend on assistive devices or other persons; and may result in accidents, injuries, and even death (Mullick, 1993). U.S. data show injuries related to bathtubs and showers as the fifth most frequent in the home furnishings and fixtures product category. Beginning at age 70, the death rate from falls increases dramatically until age 79, when it surpasses motor vehicle injuries (National Safety Council, 1997).

Recent U.S. innovations in bathroom fixtures can provide greater self-sufficiency and personal safety for older bathers. Research based on Rogers' diffusion theory (1995) suggests that older Americans may be among the early adopters of new bathing products (Sohn, 1997).

This paper and its companion (Shin & White, 1998) describe the results of cross-cultural consumer trials of a side-entry bathtub and a sit-stand lavatory sink. Using two panels ( $N = 58$ ) of mature (age 50+) Americans and Koreans, researchers addressed differences in personal bathing practices and perceptions. Subjects tested the fixtures individually in a mid-western U.S. university laboratory. Following a self-administered, pre-trial survey, each panelist performed a user-simulation while responding to interview questions.

Within a range from 50 to 85, mean age of the 29 American panelists (recruited through a local church) was 67.2 years. The 26 females and 3 males ranged from 59 to 72 inches in height (mean 64.5). Almost two-thirds (19) lived with their spouse; nearly one-third (9) lived alone. Eighty percent (23) lived in single-family homes. Over three-fourths (22) of their homes had two or more bathrooms.

Fixtures frequently located in the usual bath area were: sink with vanity cabinet (20 or 69%), combination tub/shower (12 or 41%), and separate shower stall only (11 or 38%). For safety, adequate lighting for bathing (20), non-slip tub or shower floor surface (13), and non-slip bathroom floor (9) were most common.

Well over one-half (17) of the Americans bathed once a day, most often (16) showering in a separate stall or tub/shower unit. Over one-third (10) bathed in a tub. Nearly one-half (13) usually stood to bathe, while over one-third (11) sat.

Almost 80% (23) of the U.S. group rated the overall safety of their bathing facilities as safe, but four were considered a little unsafe. Over two-thirds each reported no bathing difficulties and no health concerns that affected bathing. Four subjects cited problems getting in/out of a tub, and three had difficulty turning faucet handles. Two

persons had fallen in the bathroom once or twice in the past five years.

Americans' overall first impressions of the tub were largely positive. Their most frequent "initial comments" referred to using the fold-down seat for soaking (8), and easy access (7). Before the trial, the majority perceived the tub as more comfortable and safer than their own fixture, commonly citing places to grab, the seat, door, and slip-resistant surfaces.

Upon entering the tub, the U.S. subjects' first impressions were positive with one exception: 20 asked, "Will the door leak?" Nearly one-half (14) commented on the ease of walking in, followed by the opportunity to bathe independently despite limitations. Over three-fourths (23) rated the door as easy to operate, but many noted that it required some strength. Similarly, the seat was perceived as easy to fold up, but often required two hands.

Comments about the folding seat most frequently cited were comfort (11) and potential use by people of differing ability. Its rear location was considered "best" by nearly one-half of the Americans, primarily due to leg space and self-storing/back rest possibilities. Its height was judged best for shorter persons and children, but was a "little low" for hip surgery patients and those with bad knees. Equal numbers viewed the tub's side ledge as a higher, wider, and right-handed seat alternative; a perch for assistance or supervision; or as space for bath supplies or a footrest. Four subjects, however, noted its potential to be slippery when wet.

Most U.S. subjects' first impressions of the shower were positive. Two-thirds (19) referred to its location (on the middle wall opposite the tub door), flexibility, and resultant choices, plus ease of use. The majority favored the temperature control's color-coding and central location. Their most frequent shower concerns focused on grabbing the slide bar for support and lack of a shower curtain. While perceived as easier and safer than multiple handles, the lever handle was deemed too short and sharp-edged.

First comments about the integral grab bar most often (17) noted its help in sitting down or getting up, plus increased safety. Panelists split on whether an additional grab bar would be needed. Depending on "handedness" and grip strength, six suggested grabbing the narrow outer tub rim. The most frequent additional locations were on the outer rim behind the door for right-handed bathers, and higher and further forward to enable pulling up and steadying.

Asked whether the deep soaking tub "fit" them, most of the 25 Americans who opted to sit on the bottom referred to its length (15 long enough vs. 8 too short). The majority rated the armrest/seat supports as both comfortable and useful for rising from the bottom. The most common concern was that the armrests were not slip-resistant.

The Americans' most frequent (22) first words about the sit-stand sink focused on its attractive appearance. Asked about potential uses, 17 noted the need to sit, 14 liked the wide bowl, and 11 suggested use by people of varied heights. Relative to

preferences for knee space vs. vanity storage below the sink, 14 considered the vanity more important. While knee space was less important to a dozen respondents, they would prioritize knee space if they needed to sit.

Positive comments about the sink's size/shape outnumbered concerns two to one. Most often, U.S. subjects noted that its overhang design brought the bowl/faucet closer to seated users (9) and helped catch drips (8). The sink's depth was "adequate" for 23, while four thought it too shallow. Nearly two-thirds (18) evaluated the side/rear drain location as more aesthetic, and safer for items dropped into the sink.

The final question asked the panelists was whether the products would be "good" for families with children under age 10. For the tub/shower, the most frequent American response, "Don't know," was followed by "Not without supervision." Although a few subjects were concerned about bending over the rim to bathe toddlers, most assumed that the door would eliminate their need to lift children, and that mothers could sit on the ledge to assist. The most commonly cited attractive nuisances were the door and whirlpool jets.

For the sit-stand lavatory, the most frequent response was "good, but..." followed by increased child safety (no need for a stool). The most common caveat was about the controls: either teach children that the Up and Down buttons are not toys, or install them in a less obvious position.

## References

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