A Comparative Study of Consumer Product Packaging Comfortability between Elderly Male and Female Users

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ABSTRACT

The aim of this study is to investigate the consumer product packaging in the market and its implications for the elderly user. The focus of the study was the interaction between the packaging’s closure mechanism and the user. Twenty-four elderly males and females, above the age of sixty-five, participated in this study. They unpacked 50 different consumer packages in front of video cameras. Then, they assessed their comfort using scales ranging from 0 (easiest) to 4 (most difficult). Opening time was measured via video recording and also used in a comfortability assessment. Out of 50 packages, products using specific closure mechanisms, such as sliding and snapping mechanisms, were preferred by both male and female groups. Excessive width and smooth surfaces, on the other hand, resulted in opening difficulty for both genders. The differences in the overall opening difficulty (OOD) between the two groups implied that some packages were perceived as much more inconvenient by one gender than another. Highly ranked packages, which were considered harder to unpack by females, may have been a result from the packages’ size and weight.

Keywords: Consumer product packaging, Product usability, Container closures, Elderly users, Universal design

1. Introduction

Consumer products are packaged in every form. Most of their designs depend on their content, material, and design appeal. Besides the price, attractiveness of the package is crucial in dictating a buying decision (Chandra Lal, Yambrach, & McProud, 2015). Nonetheless, users need to be able to access the product inside with ease (Sperber 2012). Ease and comfort are easily sensed by users. One way to determine practicality is a subjective evaluation from consumers. A closure mechanism needs hands and fingers to maneuver. Weakness or pain in either hand could cause difficulties. In fact, the decreasing functionality of one’s hand affects both genders after the age of 65. Consequently, the elderly would experience such problems much more than younger users.

In the study, genders were compared, as elderly couples were usually seen living together and sharing the same household setting as well as household products. The study explores the mutual comfortability between them, to find out if some packages would yield different results between male and female users, as other factors may play an important role in the user vs. product interaction.

This study aimed to identify consumer products with the most inconvenient packaging for elderly male and female users.

2. Method

Twelve elderly men (age = 74.8 ± 3.4 years; hand length = 17.6 ± 0.8 cm) and 12 elderly women (age = 70.3 ± 4.2 years; hand length = 16.6 ± 0.6 cm) were recruited for this study. All participants were able-bodied, with no incurable visual impairment, and no upper limb injuries. They were asked to unpack 50 consumer products consisting of different kinds of packaging in terms of materials, shapes, contents, etc. Participants assessed the packaging during this process and then evaluated this experience on four parameters/indexes: strength, dexterity, flexibility, and overall difficulty. Each index was assessed on a 5-point scale ranging from 0 to 4.

In addition, opening times as well as the number of pauses were also used to determine the level of difficulty (or inconvenience) while unpacking. Opening time was measured from the time the packaging closure was touched to when it was released from the packaging material. Pause was the number of changes in grips or hand positions, or when the user switched hands, while opening. Both were measured via video recording to ensure an accurate observation.
3. Results

Table 1 shows the best (easiest) and worst (most inconvenient) packages to open, based on the overall opening difficulty (OOD) between the two genders. Elderly men ranked packages numbered 35 (small plastic sauce tube), 7 (wet tissue container), and 40 (toothpaste with snap cap) as the easiest. Elderly females ranked package numbered 32 (lipstick tube) as the easiest to open, followed by #2 (zip-lock pouch), and #35 (plastic sauce tube). The most inconvenient packaging for elderly males was #15 (glass jar with screw-top lid), followed by #39 (round plastic salad box), and #47 (plastic obento box). The female group also selected #15 (glass jar with screw-top lid) as the hardest to open, followed by #39 (round plastic salad box), and #45 (rectangular plastic salad box).

Table 2 shows the packages with the biggest OOD ranking differences between elderly males and females. Several packages were ranked differently in OOD by men and women, moving downwards from the elderly males’ placing to the elderly females’ placing. It can be interpreted that such packages were perceived by men as easier to unpack, while the women found them to be more difficult. The top three packages to be categorized differently are shown in the table: #48 (vegetable oil container with handle) moved down the most, by 21 places, followed by #40 (toothpaste with snap cap) moving down 19 places, and #16 (hair conditioner stand-up pouch with dispensing tap) by 17 places.

4. Discussion

The three most convenient and inconvenient packaging mechanisms indicated similar preferences among males and females. Both groups exhibited a high preference for packaging with sliding and snapping features, which were relevant to product #2 (zip-lock pouch) and #7 (wet tissue container), respectively. In addition, they asserted that product #35 (small sauce tube with twisting cap) was also easy to unpack due to the cap’s grooved surface. They also agreed that the twisting mechanism of a wide and smooth screw lid demanded more strength and flexibility, rendering it difficult to open. This applied to a honey jar with a metal screw-top lid (product #15) and a particularly wide round-shaped plastic salad box (product #39). According to the OOD downward gap, a vegetable oil container with handle (#48) was much easier for males to open. The most striking difference may stem from its particularly voluminous and heavy packaging and the product weight due to its liquid content.

Table 2. Top packages with the biggest downward gaps in the OOD between elderly males and females.

| Ranking | Number | Photo  | Participants | Downward Gaps |
|---------|--------|--------|--------------|---------------|
| 1       | #48    |        | 15           | 36            |
| 2       | #40    |        | 3            | 22            |
| 3       | #16    |        | 18           | 35            |

Table 1. A comparison of best and worst packages to open between elderly males and females, as determined by the Opening Overall Difficulty (OOD).

| Sex      | Number | Photo  | Participants | OOD (sec) | Time (sec) |
|----------|--------|--------|--------------|-----------|------------|
| Males    | #35    |        |              | 0.42 ± 0.67 | 3.64 ± 1.33 |
|          | #7     |        |              | 0.50 ± 0.52 | 1.32 ± 0.69 |
|          | #40    |        |              | 0.50 ± 0.52 | 1.58 ± 1.22 |
| Females  | #32    |        |              | 0.08 ± 0.29 | 0.73 ± 0.43 |
|          | #2     |        |              | 0.17 ± 0.39 | 1.26 ± 0.42 |
|          | #35    |        |              | 0.17 ± 0.39 | 3.28 ± 1.30 |

References

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