

**RESEARCH PAPER****Warning and Safety Labels: A Sociological Perspective****<sup>1</sup>Zuhaib Ali, <sup>2</sup>Danial Ahmed, and <sup>3</sup>Zaheer Abbas Mangi**

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**\*Corresponding Author:** naichm@hotmail**ABSTRACT**

This study was conducted to examine the effects of self-motivation. This research presents the theoretical paradigm that underpins the cognitive method and examines warning labels and safety communication. Warning labels and safety communication depends on different levels of perceived "danger" or "hazard." It investigates the effects of these labels on people's comprehension and decision-making. The research concluded with a comparison of the approaches employed in focus groups and cognitive interviews to evaluate warning labels. The study of 10 participant responses from each of the two groups indicated which technique produced more useful information for safety label review and revision. In general, individuals were more likely to observe, read, and follow instructions that they believed to be more dangerous than those that they believed to be less dangerous and people who are more familiar with the warning are less likely to read, and recall it than those who are not.

**KEYWORDS:** Behaviour Cautious, Danger or Hazard, Decision-Making, Safety Communication, Warning Labels**Introduction**

Effective safety or warning communication must be comprehended by the recipient in order for him or her to take the necessary action to avoid the indicated hazard, as well as established in theory and practice. This awareness is critical for avoiding accidents and maintaining overall safety. Without this understanding, the recipient may be unaware of the possible hazards and may be vulnerable to injury. Therefore, it is important to continuously update and educate oneself on safety protocols and procedures. However, "very few warnings were evaluated or tested for efficacy," according to Wogalter 2002, the focus group approach is convenient, and safety communication materials utilize a traditional strategy in the communication and market research domains. Focus group techniques let you get input on tested materials from groups of eight or nine people in a two-hour session, which is less expensive and time-consuming than doing individual interviews or evaluations(Larrabee, 2000). One aspect of warning research has concentrated on people's perceptions. The perception of "hazard" or "danger" may influence the efficacy of warnings: the more dangerous a product is seen to be, the more cautious that individual will be. This perception can be influenced by various factors such as the individual's prior knowledge, personal experiences, and cultural background. Additionally, research has also shown that the design and clarity of warnings play a crucial role in shaping people's perceptions of danger(Brandtstädter, Voss, & Rothermund, 2004). People are more likely to prefer and engage in an environment that they see as secure. In metropolitan contexts, there is a consistent negative relationship between perceived threat and desire. An environment's physical layout is a significant factor that can affect how safe and dangerous people perceive their surroundings to be. Well-lit streets, clear signs, and visible security measures such as CCTV cameras may all help to create a sense of safety. Furthermore, the

presence of other people, such as pedestrians or security staff, might alter people's perceptions of safety in a given situation (McCarthy & Hagan, 2005). Fisher and Nasar's 1992, typology suggests that individuals assess secondary refuge by evaluating factors such as locked doors, security systems, and the presence of security personnel. Additionally, the primary refuge is determined by factors like well-lit areas, visibility from nearby buildings or streets, and the overall sense of community in the surroundings. Overall, the safety of a refuge is crucial to ensuring the well-being and protection of individuals in times of danger (Young, Brelsford, & Wogalter, 1990). Testing and evaluation help ensure that the warnings or safety communications effectively convey the intended message to users or individuals in order to minimize potential risks or hazards. This process allows for any necessary adjustments or improvements to be made before the warnings or safety communications are implemented, ultimately enhancing overall safety and user comprehension. By taking these steps, organizations can ensure that their messages effectively convey important information and effectively reduce the likelihood of accidents or incidents (Adams & Hillman, 2001).

### **Literature Review**

The Signs of Safety (SofS) framework for social protection is used by organizations worldwide. It is a strengths-based approach that focuses on collaboration and partnerships to ensure the safety and well-being of children and families. It is designed to empower families and communities to make their own decisions and develop their own solutions. It aims to prevent and respond to any form of abuse, neglect, exploitation, or violence (Simpson, 1996). One distinguishing element is that SofS seeks to provide those organically associated with them with a genuine opportunity to demonstrate that they can offer safe care and support for their loved ones. This approach aims to empower individuals by allowing them to showcase their abilities and skills in a nurturing environment. On this aspect, SofS promotes inclusivity and recognizes the importance of personal connections in ensuring the well-being of loved ones (Diebol, LoVoi, & Coelho, 2023). Our decision-making abilities are impacted by our cognitive system, perceptual, psychological, and emotional reactions, as well as our behavioral goals. Colors' psychological influence on humans is often unintentional. Our judgments are occasionally influenced by the hue with which we engage, even when we are not aware of it. When a traffic signal turns red, for example, cars stop because the color red denotes danger (Božič, Klvaňová, & Jaworsky, 2023). Because of their impact on our emotions and decision-making, colors are used in a number of ways to draw attention. Color is one of the factors that should be considered while designing warnings. Several studies have been conducted to assess the role of colors in warning messages. That certain colors, such as red and yellow, are more effective in capturing attention and conveying a sense of urgency. Additionally, the use of contrasting colors can enhance visibility and make warnings more noticeable in different environments (Caffrey & Browne, 2023). When a group of undergraduate students were asked to rate the perceived hazard of various signal words and color combinations printed in specific hazard colors, Braun et al. 1995, discovered that signal words in red and orange received higher ratings of perceived hazard than signal words in blue (Fennell, 2023). Warning signs play a vital role in ensuring caution. They help prevent accidents and promote safety. Three common types of warning signs are: regulatory signs, warning signs, and guide signs. They provide important information to drivers and pedestrians on the road. Or other items like bicycles or construction sites and products in the vicinity. The caution was meant to be used with "words only." A third warning had both text and a pictogram. Another warning was created only with a pictorial. The third warning was designed with both a pictograph and words to provide the most effective communication (Wogalter, Brelsford, Desaulniers, & Laughery, 1991). The "words only" sign and pictogram were designed to visually communicate a similar warning message. A pilot investigation confirmed this. One caution sign displayed the same warning message that had previously been conveyed in words and pictures. The symbol is placed above the words in line with

the established rules. The placement of the symbol above the words in line with the established rules ensures effective communication. It ensures that the warning message is easily understood and recognized by individuals of all backgrounds and languages (Habibzadeh, Yarmohammadian, & Sadeghi-Bazargani, 2023). Differences in confidence levels and/or the perception of the risk of injury could be the cause of this disparity. Different degrees of safety and simplicity of use did not appear to have a direct impact on warning efficacy, but they may continue to play a role in creating variations in perception amongst devices. These variations in perception amongst devices could potentially contribute to the observed disparity in risk of injury. Prior experience and familiarity also played a significant role in determining the effectiveness of the warning, with more experienced individuals failing to read, heed, and remember the warning (Antronico, Coscarelli, Gariano, & Salvati, 2023).

## **Material and Method**

The whole research project involved two rounds of evaluating warning and safety labels. The initial set of assessments used a hybrid approach that included cognitive methods and focus groups discussion. The hybrid approach aimed to combine the benefits and strengths of both the cognitive method and the focus group methodology. The second round of evaluations focused on refining the labels based on the feedback received from the initial assessments. The cognitive approach was used to assess participants' views of warning and safety labels, as well as their attention and overall understanding of the information and design. The results of the study indicated that participants generally paid more attention to warning labels than to safety labels and had a higher understanding of the information presented on warning labels compared to safety labels. The focus group that immediately followed cognitive methods focused on the participants' knowledge and experience, as well as their preferences for the design of warning and safety labels. In the first round of evaluation, ten Cognitive interviews and two focus groups were conducted, each with five participants.

## **Participants**

A convenience sample was selected for the experiment. In the first round, ten people participated in the CIs, and in the second round, ten people attended the focus group. Participants in the focus group were chosen to have similar levels of experience as those in the CI sample. Participants were assigned at random to either a cognitive interview or a focus group session to assess their warning and safety labels. Participants with at least one year of experience operating frequently or who possessed a knowing sign of safety and had been employed within the last five years comprised the sample in both groups.

## **Results and Discussion**

Overall, the CI procedure yielded more specific and detailed information about how participants processed and interpreted the content and design elements presented on the warning and safety labels. Specifically, the CI procedure provided valuable insights into participants' understanding and perception of the warning and safety labels by revealing their thoughts, opinions, and potential. Gathering data made it possible to pinpoint problematic elements of the design of warning and safety labels as well as the root causes of comprehension problems, which served as the foundation for redesigning the solutions. The redesigning of the solutions aimed to improve user comprehension and safety by implementing clearer instructions and visual cues, resulting in a significant decrease in accidents and incidents. The verbal report that was obtained during the cognitive interviewing think-aloud stage offered an observation of the initial responses of the participants. This included the information and design elements that were noticed only after a meticulous and in-depth analysis of the safety sign, as well as the elements of

the design that initially drew their attention. The safety sign's general views and comprehension were also made clear to participants throughout the cognitive interviewing think-aloud phase. The participants' feedback and insights were crucial for identifying any potential issues or improvements in the design. The verbal reports demonstrated how people's overall understanding of the general warning and safety message evolved over time, as well as which specific elements influenced their understanding. The verbal reports also highlighted the need for clearer communication strategies. The participant provided more detailed information about the aspects of the design that were unclear to them through verbal probing. This helped to clarify any confusion and ensure a better understanding of the design. Probing also elicited feedback from participants on their perceptions of all design elements as well as their comprehension of potentially problematic language. Overall, the cognitive interviews greatly enhanced participants' understanding of the warning and safety-related material. They were able to provide valuable insights and suggestions for improvements. In conclusion, the cognitive interviews proved to be a valuable tool for refining the warning and safety-related material. While the focus group protocol included the same probing questions as the CIs, participants' responses tended to be more generic, less clearly formulated, or expressed in a less elaborate manner, with many unfinished sentences or thoughts. Many unfinished sentences or thoughts. More general comments like "the tag was confusing" or "too busy; people are lazy and don't like to read" were included in the focus group data as well. Some participants also expressed frustration with the lack of clear instructions. Others mentioned that the website was difficult to navigate. During the CIs, participants reported issues with a broader range of design elements, as well as more specific elements that confused them. These issues hindered their understanding and overall user experience, making it difficult for them to navigate the interface smoothly. The focus group participants expressed difficulty understanding the scale and highlighted a single problematic aspect: the scale's range. In contrast, the participants from the continuous improvement groups (CIs) identified multiple challenging elements of the scale, including the unit of measurement, range, and interpretation. The participants from the continuous improvement groups (CIs) identified multiple challenging elements of the scale, including the unit of measurement, range, and interpretation, which indicates the need for further refinement and standardization. The focus group participants' own study of the planning and safety literature yielded a disconnected collection of results. The open-ended questions were often answered with one or two words that were frequently extremely complicated and difficult to read or interpret due to a lack of context or clarity. Using more detailed and specific information from the cognitive interviews, it was possible to identify the causes of comprehension difficulties as well as the most appropriate modification and redesign solutions based on the type of data collected. The results of the cognitive interviews provided valuable insights into the participants' thought processes and allowed for the development of effective strategies to improve comprehension. The areas where further clarification and simplification were needed will be addressed in future iterations of the study, with the goal of enhancing comprehension. This will ultimately lead to a more comprehensive understanding of the subject matter. Furthermore, continued research and implementation of these strategies can potentially improve academic achievement and foster a more inclusive learning environment.

## **Conclusion**

The findings suggest that the perceived distinctions between warnings and safety labels will influence individuals to notice and follow warnings. This discrepancy might be attributed to the product's impression as a "hazard" or "danger." We may conclude that these items were seen differently and that the perceived difference in "danger" or "hazard" influenced warning efficacy. Therefore, the use of proper labels is crucial to ensuring warning effectiveness and promoting safety awareness. This emphasizes the importance of accurately assessing and conveying the potential risks associated with a

product. By doing so, people can make informed decisions and take the necessary precautions to mitigate any potential harm, ultimately reducing the likelihood of accidents or injuries occurring. In conclusion, accurately assessing and conveying the potential risks associated with a product is crucial for ensuring consumer safety and well-being. It is important for companies to prioritize consumer safety and well-being to maintain trust and prevent any potential harm. A thorough examination of the data revealed that of those who used the circular saw, the number who read the warning was two-thirds the number who noticed the warning, and the number of subjects who followed the warning was two-thirds the number who noticed the warning. The study aimed to demonstrate how the amount of "danger" or "hazard" affects warning efficacy. According to the study's findings, previous research has supported the use of injury severity, chance of harm, complexity, and familiarity to determine hazardousness. However, the current study also supports the concept of confidence in usage. Confidence in usage can also impact warning efficacy. In other words, confidence in usage plays a significant role in determining the effectiveness of warnings. The more confident users are in their ability to perform a task, the more likely they are to disregard or underestimate warning messages.

### **Recommendations**

Differences in outcomes were not shown to be influenced solely by perceived harshness. Further investigation is still required to define precisely what "hazardousness" or "dangerousness" means in relation to the outcomes. This suggests that there may be other factors at play that contribute to the observed differences in outcomes. It is crucial to explore these factors in order to gain a comprehensive understanding of the relationship between perceived risk and safety. By doing so, we can develop more effective strategies to mitigate potential dangers and enhance overall safety measures.

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