



# The effects of culturally targeted patient decision aids on medical consultation preparation for Hispanic women in the U.S.: Results from four randomized experiments



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## ABSTRACT

**Rationale:** Do culturally targeted patient decision aids (DAs) better prepare lower-middle and middle-class Hispanic American women for medical decision making compared to DAs designed for the general population? Health promotion evidence indicates that inclusion of cultural values, imagery, linguistics, and health data in a DA will improve ethnic patients' preparation relative to a generic DA; yet, this hypothesis remains untested.

**Method:** Four experiments examined consultation preparation effects of culturally targeted versus generic DAs for Hispanic women living in the United States. Drawing on highly rated online DAs, an experienced Hispanic content developer and Hispanic focus groups worked with researchers to develop culturally targeted digital DAs. Online panels of self-identified Hispanic women in the U.S. were randomly assigned to a targeted or generic DA as part of a scenario-based physician consultation for advanced diabetes (Study 1) or early stage breast cancer (Studies 2–4).

**Results:** Manipulation checks showed high awareness of cultural information in the targeted DA group. Despite efforts to rule out confounds that could account for null effects, DA cultural targeting did not increase knowledge, decision preparedness, or empowerment or reduce decision conflict in the four randomized experiments. Only individual difference variables (e.g., group interdependence) consistently predicted enhanced DA consultation preparation effects. Related research indicates that culture at the group level may exert less influence when individuals think deliberatively, feel less constrained by limited resources such as time, understand processing objectives, and/or are primed with task-specific schema/norms.

**Conclusion:** Given deeper deliberation and clearly primed processing objectives, personal experiences and task-related schema/norms may have significantly reduced the effects of cultural targeting. Consistent findings from four studies suggest that culturally targeted DAs may not better prepare Hispanic women in the U.S. for medical decision making than generic versions designed for the broader population.

## 1. Introduction

An article in the *Journal of the American Medical Association* concludes: “Skilled use of cross-cultural understanding and communication techniques increases the likelihood that both the process and outcomes of care are satisfactory for all involved” (Kagawa-Singer and Blackhall, 2002, p. 2993). This quote reflects the belief that cultural targeting of health communications improves outcomes for ethnic groups in medical decision-making contexts. In line with this thinking, Alden et al. (2014) propose that patient decision aid (DA) developers should modify generic DAs when targeting ethnic groups to include cultural content

relevant to the group and then tailor DA content to individual and situational differences within the group. The overriding goal of their model is to achieve greater “processing fluency” in order to facilitate a more positive decision support experience (Oyserman, 2011).

However, cultural targeting's effectiveness remains untested in tools that help prepare patients for medical decision making, where veridical processing, not persuasion, is the central objective (Charles et al., 2006). In addition, research in other fields suggests that cultural targeting may have weaker or even null effects under high involvement and/or well-structured decision making (Briley and Aaker, 2006; Leung and Morris, 2015). Medical decision making for serious diseases is very

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involving for patients (Garden and Seiler, 2017), and DAs assist patients by providing structure to the process (Stacey et al., 2017). Thus, prior to employing Alden et al.'s (2014) model for DA development, it is important to determine the effects of culturally targeted versus generic DA content on factors such as consultation preparedness, conflict, and empowerment. If cultural targeting is not more effective, DA developers may conclude that scarce resources are better invested in creating tools that target dimensions such as health numeracy/literacy associated with socioeconomic status (SES) or, alternatively, tailor DA content based on real time measures of individuals' health numeracy/literacy.

To address this question, four randomized, scenario-based studies tested whether cultural targeting of DAs better prepared middle-aged, lower middle/middle class Hispanic women in the U.S. for medical decision making. The DAs (whether to initiate insulin treatment for Type 2 Diabetes and whether to use chemotherapy to treat first stage breast cancer) closely followed the design and content of online generic tools (<https://decisionaid.ohri.ca/>) that received high quality ratings from IPDAS, an international DA evaluation body (<http://ipdas.ohri.ca/>). Each study builds on the previous investigation in order to address potential alternative explanations and to thoroughly examine cultural targeting effects on decision-making preparation.

## 2. Theoretical foundations

### 2.1. Avoiding processing disfluency: the goal of cultural targeting

The “theory of situated cognition” (Oyserman, 2011) argues that a cultural mismatch of health promotion or other communication content may lead to “processing disfluency,” resulting in lower perceived relevance (Kreps, 2006), lower attention levels, less effortful information processing (Updegraff et al., 2007), less positive attitudes, and weaker intentions to engage in healthful behaviors (Uskul et al., 2009). When health promotion materials are culturally targeted, researchers report improved breast cancer knowledge, more positive attitudes, and higher screening intentions among ethnic Americans (Hoffman-Goetz and Friedman, 2006; Wang et al., 2012). Multiple theoretical frameworks offer guidance on achieving cultural congruency (e.g., Kitayama et al., 2009). The theory of situated cognition predicts that, on average, individuals will experience greater processing fluency when DA content aligns with their dominant cultural mindset (Lee et al., 2010; Uskul and Oyserman, 2010; Leung and Morris, 2015). Congruency can be achieved through cultural targeting of values, visual imagery, linguistics, and group-specific evidentiary information (Kreuter et al., 2003).

Despite successful use of theory-based cultural targeting in health promotions, studies of cultural targeting effects for DAs in medical decision-making contexts are very limited. Albrecht et al. (2011) found that Germans reported confusion regarding an American DA due to excessive use of technical terms and limited psychological support information. Sheppard et al. (2010) reported that value discordance with information in a generic DA given to African Americans lowered screening intentions. The four studies presented herein are the first to use a randomized experimental approach to test for enhanced pre-consultation preparedness effects among U.S. Hispanics as a result of DA cultural targeting. Following Kreuter et al. (2003) and Alden et al. (2014), cultural targeting involved modification of online generic DAs for Type 2 Diabetes insulin use and early stage breast cancer treatment on four dimensions: values, imagery, linguistics, and group-based medical evidence (see Fig. 1).

### 2.2. DA cultural targeting factors

Research generally indicates that Hispanic culture values interdependence among family and friends more than Anglo European culture (National Alliance for Hispanic Health, 2001). Such values stress belongingness, situational flexibility, and group relationships. Independent mindsets place greater emphasis on uniqueness, trait

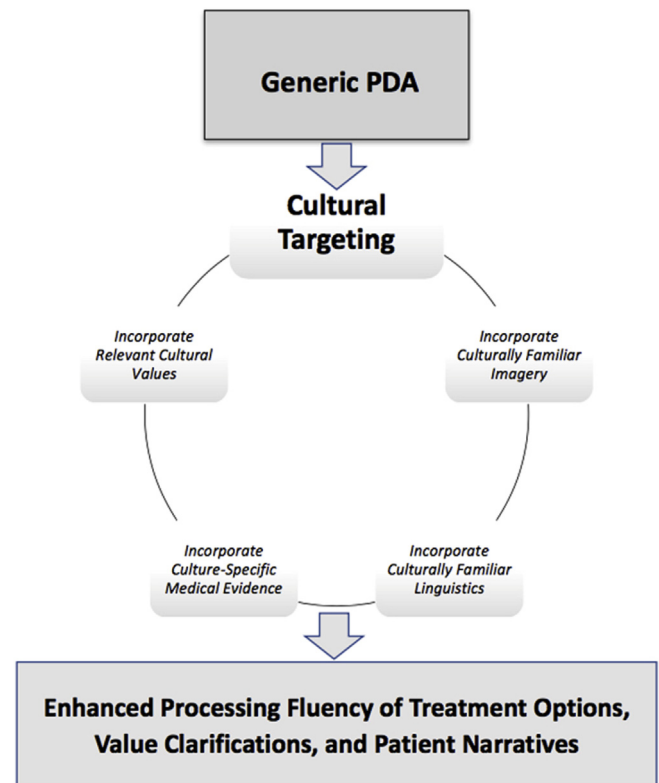


Fig. 1. PDA cultural targeting model.

stability, and personal empowerment (Cross et al., 2011). Consistent with stronger interdependence, Hispanics value familism to a greater extent than Anglos (Katiria et al., 2014). Familism emphasizes high levels of support, frequent interactions with family members or extended kin (Warda, 2000), and an obligation to care for family members, consider their advice, and provide emotional and social support during times of need (Valdivieso-Mora et al., 2016). As a result, Hispanic families are more likely to be involved in medical decision making and care for relatives (Davidson et al., 2015; National Alliance for Hispanic Health, 2001, p. 24). Gonzalez et al. (2005) found that Hispanic women diagnosed with a breast abnormality are more likely to seek social support from family members, friends, and health professionals. Similarly, Nápoles-Springer et al. (2005) found that many Hispanic patients expect the physician to solicit family input on treatment options for serious illnesses. In general, Hispanics living in the U.S. continue to hold strong familism values across generations (Romero et al., 2004).

Hispanic ethnic culture in the U.S. also includes commonly understood and familiar visual imagery and linguistic references (Buki et al., 2009; Massett, 1996; Solomon et al., 2005). While variation exists across Hispanic subcultures, certain visual symbols such as person-related visual imagery (e.g., physical characteristics such as darker hair versus blonde hair) and person-related linguistics (e.g. first names such as Maria versus Susan) are more likely to reflect prototypes featured within the cultural mindset (Kreuter et al., 2003; Rensnicow et al., 1999; Sierra et al., 2009). Of course, even within subcultures there are variations. Nonetheless, evidence suggests that imagery and linguistic prototypes based on ethnic experiences exist and are relatively more familiar within the cultural mindset than prototypes from outside the ethnic group; they are therefore more accessible within the cultural mindset (Tsai and Li, 2012).

Finally, given the importance of ethnic identity to many Hispanics living in the U.S. regardless of birthplace, length of stay, or acculturation (Padilla, 2006), it is likely that medical information focused on this ethnic group versus the overall U.S. population will prime more

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