Attribution of competence mediate the Behaviours of Caregivers and Older Adults

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Abstract

The aim of this study was to test whether age stereotypes held by caregivers and health professionals influence the behaviors of these professionals, and older adults’ functioning. A two phases study was carried out between September 2010 and June 2011 at senior citizens’ centers in the State of Colima (Mexico). In the first phase, aging stereotypes held by caregivers at the centers were assessed; in the second phase, the functioning of caregivers and older adults was observed on sites. Analyses revealed that stereotypical beliefs about competence of aging held by care professionals predict both caregivers’ behaviors and older adults’ functioning. Given that aging stereotypes held by caregivers negatively affect older persons’ functioning, it would be important to promote change in caregivers’ stereotypical beliefs in order to increase competence and active aging.

Key words: Aging stereotypes, older adults’ competence, caregivers for the older adults, older adults care services.
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**Introduction**

The influence on health of stereotypes related to aging is referred to in the Priority Direction 3 of the II International Plan of Action on Aging (UN, 2002), it being considered a determining factor for older adults’ caregivers. In the case of those working in health care for the elderly, the WHO also highlights the importance of promoting, among both health professionals and those caring for the elderly, realistic images associated with aging, since these can have pathogenic effects on older adults’ functioning and health (WHO, 1989, 2002).

One of the stereotypes models that generated most research during the last decades has been the *Stereotype Content Model*, which proposes that stereotypical beliefs about a group are based on the structural relations maintained by groups and on the functions of stereotypes in interpersonal and group relations (Fiske, Cuddy, Glick, Xu, 2002; Fiske, Xu, Cuddy, Glick, 1999). Within this model, stereotypical beliefs can be grouped around two dimensions: 1) *competence*, made up of characteristics associated with intelligence and the ability to achieve goals; and 2) *warmth*, which would group those traits related to sympathy, sensitivity or friendship.

In the case of stereotypes on aging and the elderly, the model predicts that older adults will score low on the competence dimension and high on the warmth dimensions (this would be the case of the people with disabilities or housewives), so that they generate feelings of compassion or empathy, producing what Fiske et al. call “paternalistic” prejudice, characterized by attempts at overprotection and a higher frequency of helping behaviours from other and higher levels of warmth are attributed to individuals. In spite of these stereotypes are mixed involve two separate dimensions,
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... they are not psychologically inconsistent, one may view a group as warm but not competent, in the case of older adults as warmth but incompetent, without experiencing discommodity.

Research has also shown the cross-cultural nature of this “paternalistic” view toward the elderly, so that in seven different countries (USA, Belgium, Costa Rica, South Korea, Hong Kong, Japan and Israel) older people is described with less competence and more warmth than other age groups (Cuddy, Norton & Fiske, 2002). And also, Cuddy, Fiske and Glick (2008, p. 100) found in a Mexican sample that competence dimension was positively related with the perceived status of the groups, while the warmth dimension was negatively related with the competition with outgroups.

More important are the behavioural tendencies that follow each stereotypical dimension. Older adult warmth stereotypes would predict active behavioral tendencies, while competent stereotypes would determine passive facilitation behaviors (Cuddy, Fiske & Glick, 2007; 2008). In active facilitation one explicitly aims to benefit an outgroup member (ie.older adults), and include helping or assisting behaviors. While passive behaviors are conducted or experienced with less directed effort but still have repercussions for older adults, because could benefits them.

In México, the research about influence of stereotypes towards old age among health professionals is scarce. Franco, Villareal, Vargas, Martínez, and Galicia, (2010) found a pervasive negative stereotype among health care personnel of a Mexican general hospital. These authors pointed out the need of change of these stereotypes, because their higher influence on the elderly depends on they are the professional responsible for the care to this group. In a representative older adults sample, Bustillos, Santacreu, Arias, Kruse and Fernández-Ballesteros (2012) found that Mexican assume more
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negative stereotypes, than Spaniards or German participants. However, for the three countries these negative stereotypes were a powerful negative predictor of active ageing.

Following the theoretical approaches discussed above, our first objective is to test if the ”paternalistic” prejudice toward older adults (higher levels of warmth than competence) is obtained in older adults caregivers (*H1*), replicating the data obtained (Cuddy et al., 2005; Cuddy et al, 2008). However, our *main objective* is to determine whether the stereotypes held by professionals working with older adults are related with own caregiving behaviours, given that research has shown that the automatic activation of stereotypes about aging promotes behavioural changes in individuals (Bargh, Chen & Burrows, 1996; see also Wheeler & Petty, 2001, for a review), in this case the older adults caregivers behaviour should be related with cultural stereotypical beliefs about elderly, but not with cultural stereotypes about young people (*H2*). In the same sense, it would also appear that these cultural stereotypes hold by caregivers are related with older adults’ behaviour who they are caring. (*H3*) The importance of this resides in the assumption that elders assimilate the cultural stereotype that would be exhibit in other behaviours (friends, relatives, caregivers...), and consequently older adults will display a greater frequency of stereotypical behaviours associated with older adult social category. This assumption is discussed in the work by Levy and cols. in relation to the finding of greater longevity and better health in those individuals with a more positive self-stereotype about their aging, and vice versa (Levy & Myers, 2004; Levy, Zonderman, Slade & Ferrucci, 2009; Levy, Slade, Kunkel & Kasl, 2002). Finally, we test if the relationship between behaviour displayed by caregivers and older people is moderated by competence and warmth stereotypical dimensions. Following Cuddy,
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Fiske and Glick (2007, 2008) it is expected that competence dimension moderated this relationship, because this stereotype dimension predict passive facilitation that could improve older adults functioning (H4). However, warmth dimension predict active facilitation, which could predict over helping behaviours for caregivers, and it could be related with a poor older adults functioning.

From these perspectives, a study was carried out in two phases in order to test our hypothesis. The first phase focused on determining whether professionals working with older adults hold the group stereotype predicted in the Stereotype Content Model (Fiske et al., 2002; Cuddy et al., 2005). In the second phase, carried out 10 months later, we tried to determine whether caregiving behaviours are congruent with the group stereotype of older adults, and are related to older adults behavioural functioning. If this were the case, caregivers could be seen as transmitters of the view of the elderly held in Mexican society in general.

First phase

Materials and Method

Participants in this phase were 74 care professionals for the elderly (71% women), aged between 20 and 68 (M = 39.35, SD = 12.83) from a sample of 149 professionals at 12 senior citizens’ centers in six locations in the State of Colima in Mexico.

The self-reported Stereotype Content Model questionnaire (Fiske et al., 2002) was applied in two versions, relating to the cultural stereotypes held in Mexico about older adults and about young people. Participants read the following instructions: In the following questionnaire you will be presented with series of characteristics that define people. We are not interested in your personal opinion, only in the extent to which you think these characteristics define young people and older adults in Mexico.
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Response format was Likert type from 1 (Does not describe them at all) to 7 (Describes them perfectly). Both scales yielded adequate reliability statistics in the present sample: in the case of the older adults scale, $\alpha = .90$, and in that of the young scale, $\alpha = .91$.

In addition, we calculated a potential rate of contact between professionals and the elderly obtained by dividing the number of professionals per center by the number of elderly people in their care.

**Results**

A repeated-measures MANOVA (2 x 2) was carried out, in which the first factor was perception in competence and warmth and the second factor was the group to which they were attributed. No significant effects of the first factor were found, $F(2,72) = .45$, $p = .83$, $\eta^2 = .01$. Participants attributed to the same degree the traits of competence ($M = 4.92$, $SD = .11$) and warmth ($M = 4.90$, $SD = .14$). We found an effect of the group to which the stereotype refers: more traits are attributed to the young people ($M = 5.23$, $SD = .11$) than to the elderly ($M = 4.59$, $SD = .16$), $F(2,72) = 16.89$, $p < .001$, $\eta^2 = .19$. However, an interaction effect of the two stereotype dimensions (competence and warmth) referring to the elderly and the young people was found, $F(2,72) = 58.72$, $p < .001$, $\eta^2 = .45$. These data are shown in Figure 1.

**Figure 1. Means of competence and warmth for young and elderly people**
The difference of means test applying the Bonferroni correction indicated that this effect is significant in the competence dimension ($D_{ij} = 1.37, p < .001$), but not in that of warmth ($D_{ij} = .09, ns$). That is, the older adults are perceived as less competent than the young people, but equally warmth.

We repeated the analysis considering the potential rate of contact calculated according to numbers of care recipients and number of care personnel. Participants were categorized by the median ($Md = .35$) into individuals with high or low potential contact rate. A MANOVA (2 x 2 x 2) was carried out with the two first two factors as intra-subject and the third as inter-subject. This test replicate the previous analysis, and the interaction effect previously found was not affected by the potential contact rate, $F(3,72) = .02, ns$.

In addition, we carried out two more MANOVAs considering size of municipality in which the center was located and type of funding it received (private, public or mixed), with a view to determining whether the interaction effect was dependent upon these variables. No statistically significant effect was found on the interaction effect in these
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two conditions, either in the case of size of municipality in which the center was located, $F(8,65) = 1.21$, *ns*, or in that of the type of funding received, $F(5,69) = .10$, *ns*.

**Conclusions**

The results of our first phase of study confirm our first hypothesis with regard that professionals working in elderly care hold stereotypes congruent with a cultural prejudice toward this age group, which they do not hold toward young people. This “paternalistic” prejudice is not influenced by type of municipality in which the senior citizens’ center is located, the type of funding it receives or the rate of potential contact with elderly people in line with the extensive research about the nonconscious influence of cultural stereotypes that is independent of the controlled evaluation of social groups (Devine, 1989). In other words, organizational differences among centres do not influence in the perception of older adult cultural stereotype. All of this is in support of the shared belief that elderly people as warmth but not competence, a pattern which is inverted in the case of the young people and replicates the data obtained in other countries (Cuddy et al., 2005).

**Second phase**

On the basis of these results, a second phase of the research was implemented in order to test our hypothesis.

**Materials and method**

The sample included 8 senior citizens’ centers (both institution and community centers) situated in the State of Colima (México), as the evaluation of competence and warmth dimensions were performed previously, not all centres were selected for the behavioural evaluation. In this way, researches were blind to scores of competence and warmth obtained for each centre in the first phase.
Two subscales of the Evaluation Scale (Resident’s functioning and Staff’s functioning) of the SERA (Sistema de Evaluación de Residencias de Ancianos; Fernández-Ballesteros, 1996) in accordance with the Multiphasic Environmental Assessment Procedure MEAP by Moos and Lemke (1996) were administered:

Residents’ functioning. This subscale has 5 dimensions: Personal hygiene, State of clothing, Interaction between residents, Brief verbal exchanges and General level of activity. Response format goes from 0 to 3, greater scores indicate a better Residents’ functioning. Example of items for Personal hygiene subscale: (3) Very well groomed (they look well-groomed, well groomed, men are shaved). (2) Fairly well-groomed (not especially clean or dirty, look presentable). (1) No well-groomed (hair disheveled, unshaven men are, but the appearance is satisfactory). (0) Not clean or dirty (hair, nails, beard and unkempt look desantendidos, unpleasant odors may be noticeable). In the case of Interaction between residents subscale: (3) Most residents are interacting, there are few isolated individuals. (2) About half of the residents appear to be interacting or the other are very close, (1) Some residents interact in pairs or small groups but many are lonely, and (0) Most residents are alone, walking, or in bed.

Staff functioning. This has 5 variables, of which the first four were used: Quality of interaction, Physical contact, Organization, Staff availability for residents and Conflict between staff members (for example, “do staff have physical contact with the users”, “What is the degree of availability of the staff for the users”). Response format goes from 0 to 3, greater scores indicate a better Staff functioning. Example of items for Quality of interaction subscale: (3) The staff works with residents in a warm and personal way. (2) Many staff contacts occur as part of its obligations, but the contact is personal and informal. (1) Most contact is formal, and is mainly related to the fulfilment
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of their obligations. (0) The contact is formal, dry, with some attitude of superiority. In the case of *Physical contact* subscale: (3) It is observed prolonged and close physical contact between residents and staff (hugging or extended rest the arm on the back of the resident). (2) It is noted that some staff help residents to walk or climb stairs or catch the resident's hand or arm during conversation. (1) Some residents may take the arm of an employee, but there are few more touches. (0) Little or no physical contact.

These ratings were made after observation at the senior citizens’ centers over a five-day period (2 hours per center, after a half hour period of non-systematic observation). Observations were made at different days and different times of day. Internal consistency (Cronbach’s alpha) reported for these scales are, respectively, .71 and .77. There is independence between the two subscales, and inter-rater reliability was in a range around .75 for Spanish sample (Izal, 1992), however Moos and Lemke yielded significant correlation among the two Scales in USA ($r = .48$).

**Results**

We averaged the scores on the scales for functioning of staff and residents, the staff functioning scale yielding an average score of 2.47 ($SD = .77$; range= 0-3), while the residents’ functioning scale yielded an average of 1.89 ($SD = 1.00$, range= 0-3).

The Pearson correlation analyses between the variables considered in the first and second phase showed, first of all, that residents’ functioning was significantly related to staff functioning at the centers assessed ($r = .76$, $p < .01$). More important was the finding that it was the stereotypical dimensions of competence and warmth attributed to elderly people by the professionals that were related to the behaviour observed in the professionals, as in the elderly residents themselves (see Table 1). However, the stereotypical dimensions of competence and warmth attributed to young people did not
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confirm our second and third hypothesis.

**Table 1: Pearson correlations among Caregivers, Residents functioning and competence and warmth dimensions for young and older adult people**

<table>
<thead>
<tr>
<th></th>
<th>Residents’ functioning</th>
<th>Staff functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence of Older adults</td>
<td>.44**</td>
<td>.69**</td>
</tr>
<tr>
<td>Warmth of Older adults</td>
<td>.50**</td>
<td>.59**</td>
</tr>
<tr>
<td>Competence of young people</td>
<td>.08</td>
<td>-.08</td>
</tr>
<tr>
<td>Warmth of young people</td>
<td>.21</td>
<td>.18</td>
</tr>
</tbody>
</table>

*Note: ** p < .01*

In a first stage, we test the effect of Staff functioning on Resident functioning without consider the effects of the moderators variables. Results indicate that the behavior displayed by caregivers has an effect on the resident behavior, $\beta = 1.24, t = 8.04, p < .0001$. To determine whether the stereotypical dimensions of competence and warmth attributed to the elderly show moderating effects between the professional caregivers and the elders’ behaviour, we applied the procedure developed by Preacher and Hayes (2004, 2008), since it offers the possibility of assessing simultaneously the indirect effects of two moderating variables (dimensions of competence and warmth attributed to the elderly) on the dependent variable (behaviour of the elders). In this way we assessed the moderator role of the perception of the competence and warmth traits to the elderly in the relation between the behaviour observed in the care professionals and the behaviour observed of the elderly people at the eight centres.

This analysis showed that the data have a satisfactory fit to the model ($R^2 = .73, F = 41.64, p < .0001$). The behaviour of the care professionals has a significant effect on
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β = .92, t = 6.29, p < .0001, on the dimension of competence,
β = 1.10, t = 3.39, p < .001, and on the dimension of warmth, β = 1.36, t = 4.01, p < .0005, with a total effect on the behaviour observed in the elderly people that takes into account the effects transmitted through the mediating variables of β = 1.24, t = 8.09, p < .0001. These results confirm our fourth hypothesis, and are summarized in Figure 2.

As can be seen in Figure 2, the competence dimension showed a significant effect on the behaviour displayed by the elderly people, β = .28, t = 4.02, p < .0005. However, the other moderator, the warmth dimension, did not show significant effects on the behaviour of the elderly people at the centers studied, β = .01, t = .15, ns. This clearly indicates that the relation between the elders’ behaviour and the professionals’ behaviour is moderated by the perception of stereotypical traits of competence, but not of warmth. In other words, passive facilitation behaviours improve older adults functioning, but not active facilitation behaviours.
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**Figure 2: Mediation analysis of competence and warmth dimension of Caregivers functioning on Resident functioning**

![Diagram showing mediation analysis](image)

**Note:** Values in parentheses are the Betas for the relationships prior to the inclusion of the mediators

**p < .01**

This significance of the indirect effect through the moderator (competence dimension) was calculated using the bootstrapping method on 1000 random sub-samples created on the basis of the data obtained (MacKinnon, Lockwood, Hoffman, West & Sheets, 2002). As can be seen in Table 2, the indirect effect of the competence dimension to the elderly was significant, with a confidence interval of 95%.

**Table 2: Indirect effect of Caregivers’ functioning on Residents’ functioning**

<table>
<thead>
<tr>
<th>Indirect effect</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UL</td>
</tr>
<tr>
<td>Attribution of competence</td>
<td>.31</td>
</tr>
<tr>
<td>Attribution of warmth</td>
<td>.01</td>
</tr>
<tr>
<td>Total</td>
<td>.32</td>
</tr>
</tbody>
</table>

**Note:** CI = Confidence Interval, UL = Upper Limit, LL = Lower limit
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In order to support more clearly our hypothesis, we repeat the same procedure taking into account Resident functioning as predictor variable, and Staff functioning as dependent variable. The results indicate a lower fit of the model than in the previous analysis ($R^2 = .60$, $F = 23.70$, $p < .0001$), and moderator variables did not show significant effects on Staff functioning (competence dimension, $\beta = .10$, $t = 1.75$, $ns$; warmth dimension, $\beta = .07$, $t = 1.44$, $ns$).

**Discussion**

In the second phase of our study we saw how the professional caregivers’ behaviour has effects on the behaviour of the older adults at the centers assessed. And also we found that the behaviour observed among the caregivers is related to the cultural stereotypes they hold about older adults. Finally, results indicate that the behaviour observed in older adults themselves is related to the degree of competence and warmth perceived in Mexico.

However, and in parallel to the results obtained in the first phase, we found the competence dimension to be the variable that moderated the relations between the professionals’ behaviour and that of the elderly people themselves at the centers assessed; this was even more noticeable when in the regression analyses we controlled the effects of the warmth dimension, which in the correlation analyses also showed a relationship with the elders’ behaviour. Furthermore, analyses indicate that this is not true in the other side: competence dimension do not moderate the prediction of Resident functioning on Staff functioning.

In other words, better quality of care showed by the professionals (greater availability, more physical contact with residents, etc.) is associated with better functioning and higher levels of general activity of the older adults at the centers.
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assessed (better hygiene, better quality of interaction between the elderly people themselves, more verbal exchanges between them). Moreover, this positive relation partially depends on the professionals’ assuming that the elders have higher levels of competence but not warmth, given that at the centers in which the professionals harbour less “paternalistic” prejudice the elders’ functioning is positively influenced.

**General discussion**

Our results confirm the previous hypotheses. In our first phase we observed that the professional caregivers confirmed the stereotype found in other countries, attributing to them higher levels of warmth than of competence, and thus reproducing a “paternalistic” prejudice toward this age group by comparison with their attitude toward young people. Moreover, we observed no influence of type of municipality in which the center was located, type of funding they received or ratio of professionals/elders at the centers.

On the other hand, in the initial phase of the study we found it to be the competence dimension within the Stereotype Content Model (Fiske et al., 2002; Cuddy et al., 2005) through which the professionals differentiate between young people and the elderly, while the warmth dimension is similar for the two groups. Likewise, it is the dimension of competence perceived by the professional caregivers that transmits part of the effects of the caregivers’ behaviour to the elders’ behaviour.

These results are consistent with the experimental research on automatic activation of age-related stereotypes (Levy & Myers, 2004; Levy et al., 2002; Levy et al., 2009), in which it is shown that when older adults are exposed to positive stereotypes of their group they perform better in cognitive and physical test than when they are exposed to negative stereotypes. This is based on the fact that the subliminal presentation of
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Stereotypes is on the same level as the behavioural transmission of cultural stereotypes (Bargh & Williams, 2006), positive or negative, to the elderly.

In the case of the present study, it can be assumed that professional caregivers of the centers evaluated are transmitting negative stereotypes; given that they can be considered “experts” in the field of aging, in the same sense that Franco et al. (2010) propose in other health care Mexican setting, and the impact of such stereotypes, in this case “paternalistic”, may be much powerful. Furthermore, we found that a passive facilitation, clearly related with higher competence scores (Cuddy et al, 2007, 2008), is positive related with a better older adults functioning; while active facilitation behaviours could imply an increase of overhelping behaviours toward older adults that finally affect negatively to the older adults functioning.

**Limitations of the present research**

Our study has several limitations that should be considered for future research. First, the data comes from a cross-sectional study in which we are analyzing cultural stereotype perception, and older adult caregivers behaviours displayed. It would be necessary develop experimental designs in which the activation of cultural stereotypes will manipulated, observe older adults caregivers behaviours, and evaluate the behaviour of older adults in their same centres, for testing more carefully this question. That is, it would be necessary to know more about “paternalistic” prejudice held by caregivers influence on older adult behaviours.

Secondly, it also would be necessary relate objective variables (for example objective health, intellectual functioning, physical fitness, functional abilities), with the activation of cultural stereotypes by older adults caregivers.
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