Demographic Predictors of the Perceived Likelihood of Hiring a Health Care Advocate

Lauren E. McKinley¹, Mathew M. Mansoor¹, Charles Van Liew², Symone A. McKinnon¹, and Terry A. Cronan¹

¹ San Diego State University, Department of Psychology
² Grand Canyon University, Department of Psychology

Abstract

Background and Significance: The field of health care advocacy developed in response to the growing complexity of the health care system. A Health Care Advocate (HCA) is a trained professional who can help patients navigate the health care system. In the present study we investigated the effects of social support, number of people with whom individuals reside, gender, age, income, and race on the perceived likelihood of hiring an HCA for oneself. Method: Nine hundred and eighty-seven adults (Mage = 45.48 years, SD = 17.33 years, 55.4% female) were randomly selected and asked to complete a questionnaire. To explore the relationships of the perceived likelihood of hiring an HCA, path-analytic models using full-information maximum likelihood (FIML) estimation were tested, using Stata 12.1. Results: The model fit well statistically, χ²(5, N = 987) = 8.50, p = 0.131, and descriptively, CFI = 0.999, RMSEA = 0.027, pclose = 0.891, CD = 0.205. Conclusion: Overall, the model accounted for 4.30% of the variance in Hire HCA. More research is needed to better understand the role of an HCA in our complex and ever-changing health care system.

Introduction

As the healthcare system becomes increasingly difficult to navigate, patients are faced with more challenges. Researching treatment options, understanding medical jargon, coordinating finances, and obtaining quality care can be overwhelming. As a result, patients may develop uncertainties regarding their illnesses and the care being provided by their health care specialists (Han, Klein, & Arora, 2011). A Health Care Advocate (HCA) has been described as a professional who received training on the inter- and inner-workings of the healthcare system and whose obligation is solely to the patient, independent of any other organizations (Hurst, 2007). The cost of hiring an HCA ranges from $30 to $300 per hour and is not typically covered by health insurance (Vasserman-Stokes, Cronan, & Sadler, 2012). In some cases, HCAs may provide the same services as patient advocates (Schwartz, 2002), nurse navigators (Swanson & Koch, 2010), or social workers (Van Voorhis & Hostetter, 2006). An HCA can assist patients by coordinating treatment plans and medical appointments, promoting patient rights, maintaining informed decision making, and providing patients with additional support (Carlson et al., 2011). These services can reduce patient burden and increase the use of preventive care (Scholle, Agatisa, Krohn, Johnson, & McLaughlin, 2000). Our previous studies have indicated that participants perceive the services offered by an HCA as desirable across a variety of situations, including assisting with sick children (Wooldridge, Vasserman-Stokes, Cronan, & Sadler, 2013), older parents (Van Liew & Cronan, 2012), and those who are sick and do not have assistance from friends or family (Carlson et al., 2011; Cronan et al., 2010). However, few researchers have studied the characteristics of those who may be the most likely to hire an HCA and under which conditions. In a previous study conducted in our
lab, Wooldridge et al. (2013) found that a respondent's perceived likelihood of hiring an HCA was greater for a child who was 1 year old than for a child who was 13 years old. When examining the specific factors that indicated the overall perceived likelihood of hiring an HCA, Carlson et al. (2011) found that respondents who were non-White and 40 to 64 years of age reported a greater perceived likelihood of hiring an HCA than Whites and individuals who were 65 and older. In addition, those who were 65 and older, and less satisfied with their level of social support, reported a greater perceived likelihood of hiring an HCA than those who were younger and more satisfied with their social support. When gender was considered, Carlson et al. (2011) also found that females reported a higher perceived likelihood of hiring an HCA than did males.

Wooldridge et al. (2013) examined the effects of respondents’ incomes on the perceived likelihood of hiring an HCA and found that those who reported lower annual incomes had a greater perceived likelihood of hiring an HCA than those who reported higher annual incomes. The severity of chronic health conditions was also perceived as a factor in the likelihood of hiring an HCA. The perceived likelihood was greater for a child when the illness had a higher, rather than a lower, probability of mortality (Wooldridge et al., 2013).

In another study (Van Liew & Cronan, 2012), the perceived likelihood of hiring an HCA for an elderly parent affected by a cognitive condition was examined. They also found that the likelihood of hiring an HCA depended on the level of perceived severity of the elderly adult’s condition, with conditions evaluated as more severe leading to an increase in the likelihood of hiring an HCA. In yet another study, confidence in the health care system was examined. Cronan et al. (2010) found that participants reported a greater perceived likelihood of hiring an HCA when confidence in the health care system was described as being low rather than high.

The services an HCA can provide may be more beneficial to some demographic populations than to others. Ethnic minorities, people from low-income groups, those living alone, and older people face challenges related to a lack of education and insecure living conditions, and low levels of support (Kharicha et al., 2007; Scheppers, Van Dongen, Dekker, Geertzen, & Dekker, 2006). Stronks, Ravelli, and Reijneveld (2001) found that belonging to a minority group was associated with less use of specialized health care services. Additionally, people who live alone cannot discuss health-related information and receive feedback from cohabitants (Kharicha et al., 2007). Furthermore, older adults may experience more difficulties accessing health care. Goins, Williams, Carter, Spencer, and Solovieva (2005) found that older adults experienced more barriers, such as transportation difficulties, limited health care supply, financial constraints, and were more likely to receive poor quality health care and experience social isolation, when accessing needed care. Finally, low levels of social support have affected patients’ medication adherence (Scheurer, Choudhry, Swanton, Matlin, & Shrank, 2012) and are related to increased risk for poor health in general (Uchino, 2006). Thus, previous investigators have found demographic differences in both health outcomes and access to care as a function of living alone, minority status, gender, and income. However, few researchers have examined predictors of the perceived likelihood of hiring a health care advocate.

The Current Study
Given the aforementioned challenges to people of different demographic groups, it is important to examine demographic predictors of the perceived likelihood of hiring an HCA, because this information may help health care workers to anticipate the needs of people using the health care system and to provide better care. Although a previous study conducted in our lab (Carlson et al., 2011), examined the effects of demographic characteristics on the perceived likelihood of hiring an HCA, the number of people living in the household with participants was not included in the model. Thus, the present study is both a replication and extension of our previous work in a new sample of community members. The purpose of the present study was to examine the effects of social support, number
of people with whom individuals reside, gender, age, income, and race on the perceived
likelihood of hiring an HCA for oneself in the case of future illness or injury. It was
hypothesized that the effects of social support would be moderated by the number of people
with whom individuals reside. In addition, it was expected that the effects of gender, age, income,
and race on the perceived likelihood of hiring an HCA would be mediated by social support and
the number of people with whom individuals reside.

Methods

Participants
There were 987 participants (55.4 %
female) recruited for this study from Balboa
Park in San Diego, California. The mean age of
participants was 45.48 (SD = 17.33, range 18 to
85). Most participants were White (75.9 %) and
married (52.5 %). Less than one percent of
participants had less than a high school
education. Most participants' annual family
income was $60,000 or greater (57.6 %). Most
also had health insurance (86.9 %). The mean
number of people residing in the household with
the participant was 1.91 (SD = 1.43, range 0 to
11). No incentives were provided for
participation, and all questionnaires were
collected without any identifying information.
Participants were treated in accordance with the
ethical guidelines of the American Psychological
Association (American Psychological
Association, 2010).

Measures
Social support was assessed by asking
participants to indicate the amount of support
they felt they received from family and friends,
using a 5-point Likert-type scale ranging from 1
(Not At All) to 5 (A Great Deal). To assess the
perceived likelihood of hiring an HCA, participants were asked if they became ill or
injured, how likely would they be to hire a
health care advocate for themselves, using a 10-
point Likert-type scale ranging from 1
(Extremely Unlikely) to 10 (Extremely Likely).
Both items were written by the researchers. The
demographic characteristics assessed were
number of people with whom the individual
currently resides, gender, age, income, and race.

Procedures
Participants were randomly selected and
approached at Balboa Park in San Diego,
California by researchers, using random number
sequencing procedures. Research assistants used
numbers randomly generated from a computer to
decide whom to approach. They recruited
individuals who appeared to be 18 years of age
or older, who walked by their assigned area of
the park, and approached the nth potential
participant, based on the random number. For
example, if the number listed was 4, the research
assistant approached the fourth person walking
by him/her. To select the next person to
approach, the research assistant used the next
number listed in the sequence. Balboa Park was
selected for data collection because it is located
near many of San Diego's highly populated
residential neighborhoods, and approximately 12
million diverse individuals visit the park each
year. To be eligible to participate in the study,
individuals were required to be 18 years of age
or older and speak and read English.
Researchers approached participants and
inquired about their willingness to participat
in a study regarding health care advocacy.
Interested participants were presented with a
cover letter explaining the purpose of the study.
They were informed that the questionnaire
would remain confidential and take 5 to 10
minutes to complete. The first half of the
questionnaire was composed of several
questions assessing a participant's perceived
likelihood of hiring an HCA. The second half of
the questionnaire was composed of social
support and demographic questions. Upon
completion of the questionnaire, researchers
collected the materials from the participants and
thanked them for their participation.

Data Analyses
Path-analytic models using full-information
maximum likelihood (FIML) estimation were
tested, using Stata 12.1 to explore the
relationships of the perceived likelihood of
hiring an HCA for oneself in the case of future
illness or injury to (Hire HCA), Social Support
(SS), Number of People with whom individuals
reside (NP), Gender, Age, Income, and Race (coded as non-White and White). Model specification followed the recommendations of Acoc (2013) for performing path analysis in Stata using the structural equation modeling command (sem) and graphical user interface. Statistical fit was evaluated using the $\chi^2$ test where $p \geq .05$ indicated good statistical fit. Descriptive fit was evaluated using CFI $\geq .95$ and RMSEA $\leq .05$ as primary indicators of good model fit (Hu & Bentler, 1999). To ease interpretation of the various direct and indirect paths, Figure 1 was provided to summarize the significant effects observed. It was hypothesized that the effects of SS would be moderated by NP; therefore, an interaction term (SS x NP) was included in the model. The model specified multiple partial mediation paths, hypothesizing that the effects of Gender, Age, Income, and Race on Hire HCA would be partially mediated by SS and NP. The theoretical intent was to model Gender, Age, and Race as fully exogenous predictors; income as an endogenous mediator—predicted by Age and predicting SS, NP, and Hire HCA; SS and NP as the primary, endogenous mediators—predicted by Gender, Age, Income, and Race and predicting Hire HCA, accounting for the inherent indication of SS x NP by SS and NP, with SS x NP serving as a predictor of Hire HCA.

**Results**

Descriptive statistics for the variables examined in this study are provided in Table 1. The model fit well statistically, $\chi^2(5, N = 987) = 8.50, p = 0.131$, and descriptively, CFI = 0.999, RMSEA = 0.027, pclose = 0.891, CD = 0.205. Overall, the model accounted for 4.30% of the variance in Hire HCA. For the summary of significant direct and indirect effects, see Figure 1. Race, Age, and Income were significant predictors of NP: Whites lived with fewer people than non-Whites, older persons lived with fewer people than younger persons, and those with lower incomes lived with fewer people than those with higher incomes. Social Support was predicted significantly only by income, indirectly via NP, with higher income leading to lower SS via increased NP; however, this effect was small. With respect to Hire HCA, the direct effects of Gender, Race, SS, and SS x NP were statistically significant. Females had a higher perceived likelihood of hiring than males, and non-Whites had a higher perceived likelihood of hiring than Whites. As SS increased, the perceived likelihood of hiring an HCA decreased, but this effect was attenuated by NP. For example, a person who rated SS as low, but who lived with many other persons presently, had a lower perceived likelihood of hiring than a person who rated SS as low, but who lived with no or few other persons presently. The only significant indirect effects on Hire HCA were for Gender (through SS) and SS (through SS x NP). For both of these, the indirect paths were in the opposite direction of the direct path, indicating an attenuating indirect effect (consistent with the direct effects of SS on Hire HCA and SS x NP on Hire HCA relative to Gender and SS, respectively). The absolute values of the ratio of direct to indirect effect on Hire HCA for Gender was 6.891 and for SS was 2.024, indicating that these effects were predominantly direct.

**Table 1**

<table>
<thead>
<tr>
<th>Participant Demographics</th>
<th>Valid %</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44.60</td>
<td>438</td>
</tr>
<tr>
<td>Female</td>
<td>55.40</td>
<td>544</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $30K</td>
<td>18.59</td>
<td>176</td>
</tr>
<tr>
<td>$30K-$59,999</td>
<td>23.76</td>
<td>225</td>
</tr>
<tr>
<td>$60K-$89,999</td>
<td>22.70</td>
<td>215</td>
</tr>
<tr>
<td>$90K-$119,999</td>
<td>13.83</td>
<td>131</td>
</tr>
<tr>
<td>$120K-$149,999</td>
<td>9.82</td>
<td>93</td>
</tr>
<tr>
<td>$150K-$179,999</td>
<td>5.39</td>
<td>51</td>
</tr>
<tr>
<td>$180,000+</td>
<td>5.81</td>
<td>55</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>75.86</td>
<td>748</td>
</tr>
<tr>
<td>Non-White</td>
<td>24.14</td>
<td>238</td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>45.48</td>
<td>18-85</td>
</tr>
<tr>
<td></td>
<td>(17.33)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of People</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living in Residence</td>
<td>1.91 (1.43)</td>
<td>0-11</td>
</tr>
<tr>
<td>Social Support</td>
<td>4.14 (1.06)</td>
<td>0.5-5</td>
</tr>
<tr>
<td>Hire an HCA</td>
<td>4.31 (2.73)</td>
<td>1-10</td>
</tr>
</tbody>
</table>
Discussion

The results from the present study indicated that gender, race, social support, and the interaction between social support and the number of people in the household all directly predicted the perceived likelihood of hiring an HCA. Gender also indirectly affected the perceived likelihood of hiring an HCA through social support. Social support directly and indirectly affected the perceived likelihood of hiring an HCA through the interaction of social support and the number of people in the household.

Gender had a direct effect on the perceived likelihood of hiring an HCA. Females had a higher perceived likelihood of hiring an HCA than males; this finding is consistent with the hypothesis, and also with the findings of Carlson and colleagues (2011). One explanation for this finding is that people may believe that, because females live longer than males (Christensen, Doblhammer, Rau, & Vaupel, 2009), females will be more likely to need to hire an HCA, because they are more likely to outlive their male partners, and thus to need the assistance of an HCA. On the other hand, people may believe that males would be less likely to need to hire an HCA because their female partners will be able to care for them as they age and experience poorer health (Spitze & Ward, 2000).

The direct effect of gender (with females having a higher perceived likelihood of hiring) was attenuated by an indirect effect via social support in the opposite direction. That is to say, whereas females in general had a higher perceived likelihood of hiring an HCA than males, the fact that females also tended to have more social support than males (and higher social support predicted a lower perceived likelihood of hiring) makes the final difference between males and females smaller descriptively than the gender differences alone would predict.
This suggests that females, despite having more social support than males in ecological contexts, still desire more support from professionals, such as HCAs, than males. This may reflect general differences between males and females in decision-making styles. For instance, some researchers have found that females engage in shared decision-making behaviors more effectively than males because they are more likely to ask more questions, gather additional information, and have collaborative relationships with their physicians (Cooper-Patrick et al., 1999; Wyatt et al., 2014). This explanation is consistent with the findings of Antonucci and Akiyama (1987), who found that females had larger social support networks and were more likely to receive support from multi-sources (e.g., spouses, children, friends and others) than males, who tended to use their spouses as their sole source of social support. Researchers have found that females benefit more from their social support than males (Katz, Irish, Devins, Rodin, & Gullane, 2003); thus, females may benefit more from the services of an HCA.

The findings also indicated that race directly predicted the perceived likelihood of hiring an HCA. As hypothesized, non-Whites were more likely to perceive that they would hire an HCA than Whites. This finding is consistent with those of Carlson et al. (2011) and Vasserman-Stokes et al. (2012). Scheppers et al. (2006) suggested that ethnic minorities may experience communication difficulties with their physician and have less knowledge about how to navigate the health care system. Therefore, minorities may benefit from the services of an HCA more than Whites. Furthermore, it was suggested that people from minority groups may be more intimidated by their physicians because they lack the education and/or knowledge to communicate with them effectively. For this reason, minorities may be less likely to ask questions about implementing medical instructions or describing the iatrogenic effects of prescribed medication or regimes to their physicians. Instead, patients may stop their treatment regimens and negatively affect their health outcomes. However, if the person had an HCA, the HCA could also communicate with health care providers on the patient's behalf in order to ensure that all of the patient's symptoms were being accurately reported. Having an HCA attend medical visits with minority members, to facilitate effective communication between patients and their physicians, may improve the treatment outcomes and health of people from minority groups.

The findings indicated that the effect of social support was mostly direct and negative, which may help explain the inconsistent findings regarding the relationship between social support and perceived likelihood of hiring an HCA reported previously by our lab (e.g., Cronan et al., 2010, cf. Carlson et al., 2011). The inconsistency of these earlier findings may be the result of different perceptions of social support among participants (i.e., emotional versus pragmatic support; e.g., logistical, informational; Veiel, 1985). This is consistent with the moderating effect of household size. Both the moderating and mediated moderation effects of household size buffered the negative effect of social support on perceived likelihood of hiring an HCA. This is consistent with the possible duality of interpreting the construct of social support. For example, among those who feel high levels of support, but have a large household, it seems likely that they realize that, regardless of their high levels of emotional support, pragmatic support may be impossible, as it is likely that large households are indicative of large families, in which adults have multiple responsibilities in caring for others as well as themselves. For example, the combination of the direct effect of social support, indirect effect of social support via the moderated relationship with household size, and the overall moderated effects of household size buffered the negative effect of social support on perceived likelihood of hiring an HCA.

However, neither age nor income predicted the perceived likelihood of hiring an HCA. These findings are contrary to those of Carlson et al. (2011), who found that older people who were less satisfied with their social support were more
likely to perceive that they would hire an HCA than those who were younger and more satisfied with their social support. There was no direct effect of income on the perceived likelihood of hiring an HCA. This finding is contrary to the finding of Wooldridge et al. (2013) that individuals who had a lower annual income reported a higher perceived likelihood of hiring an HCA than those with a higher annual income. Age and income of the respondent both had direct effects on the number of people with whom one lived. Older individuals reported living with fewer people than younger individuals. This finding is consistent with the information provided by the U.S. Census Bureau (2014). In addition, those who reported having higher household incomes lived with more people than those who reported having lower household incomes. This is not surprising, because if more adults are in the household, it might be expected that the household income would be higher.

The findings should be viewed within the context of their limitations. A limitation of the current study was the use of self-report questionnaires. As is always the case when people complete questionnaires, there is a self-report bias, which may cause people to inaccurately report their demographic or social support information. Another potential limitation of the study was that participants were asked about their perceived likelihood of hiring an HCA. It is possible that a person’s perceived likelihood of hiring is different from what their actual hiring behavior would be. A third limitation of the study was that, because people who did not speak and read English were excluded from the study, it is possible that the full impact of ethnicity may not have been assessed. It is possible that only people who were more acculturated participated, and thus the effects were attenuated. In future studies, questionnaires should be included in other languages, to better assess the effects of ethnicity on the perceived likelihood of hiring an HCA. Future researchers could also examine the influence of cost and insurance coverage on hiring behaviors, as well as the effects of native language, acculturation, and language fluency.

As the health care system has become more complex, patient satisfaction has decreased. One consequence of this is that patients may require additional assistance in navigating the health care system. The field of health care advocacy is still in its infancy, and continues to grow and adapt to changes in the health care system. More research is needed to better understand the role of an HCA in our complex and ever-changing health care system. In addition, the information from studies about HCAs should be used by the health care system to help determine the changes that would be most effective in reducing the needs of patients so that it is more accessible, better meets the needs of its users, and thus reduces the need for the services provided by HCAs.

References
Acock, A. C. (2013). Discovering structural equation modeling with Stata. College Station, TX: StataCorp LP.


**Author Information**

Terry Cronan  
Email: tcronan@mail.sdsu.edu  
Address: 6505 Alvarado Road, Suite 110  
San Diego, CA 92120  
United States  
* corresponding author