The influence of culture on care receivers' satisfaction and aggressive tendencies in the emergency department

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**Abstract**

Reducing aggressive tendencies among care receivers in the emergency department has great economic and psychological benefits for care receivers, staff, and health care organizations. In recent years, following migration and globalization, emergency departments have become multicultural, leading to gaps in communication between medical staff and care receivers from different cultural groups. In two studies conducted in a large multicultural hospital emergency department, we examined how cultural factors interact in order to enhance care receivers’ satisfaction and reduce their aggressive tendencies. In Study 1, we explore how care receivers’ cultural affiliation, individual cultural characteristics, and the cultural situational setting interact to increase care receivers’ satisfaction and reduce their aggressive tendencies. In Study 2, we explore how individual cultural characteristics of care receivers and medical staff interact to increase care receivers’ satisfaction and reduce their aggressive tendencies.

Data were collected using survey responses from 214 care receivers in Study 1, and from 168 care receivers and eight medical staff members in Study 2. We use structural equation models and the bootstrap method to analyze the data.

In Study 1, care receivers’ openness to diversity (an individual cultural characteristic) was positively related to their satisfaction, leading to lower aggressive tendencies, only when they were affiliated with a cultural minority group and when the cultural situational setting included language accessibility. In Study 2, medical staff’s motivational cultural intelligence (Additional individual cultural characteristic) moderated the positive relationship between care receivers’ openness to diversity and their satisfaction, leading to lower aggressive tendencies. The nature of this moderation revealed a compensation pattern where high motivational cultural intelligence in medical staff compensated for low openness to diversity in care receivers.

Our results demonstrate that cultural affiliation, individual cultural characteristics, and cultural situational setting can affect care receivers’ satisfaction and aggressive tendencies in a multicultural emergency department context. In particular, high cultural proficiency in either staff or care receivers, and making information accessible in the latter’s mother tongue, increased satisfaction and reduced aggressive tendencies among cultural minority care receivers.

Keywords:aggression; satisfaction; health care management; cultural accessibility; cultural sensitivity.

**Introduction**

Aggression by care receivers (patients and escorts) against medical staff in health care systems is a severe problem with substantial costs and implications. In any organization, aggression against employees can elevate levels of turnover, exhaustion, and burnout [1] [2] [3] [4]. Aggression can increase the frequency of errors [5] and impair staff performance [6][7]. Extreme forms of aggression even cause physical injuries and deaths [8]. The UK National Health Service estimates the cost of aggression against medical staff at £69 million annually [9].

Although care receivers have been found to engage in aggression against medical staff in all hospital areas, some settings are at higher risk. Consistent findings indicate that medical staff in emergency departments (EDs) are at extreme risk of being the targets of aggression, compared to medical staff in other hospital wards [10] [11]. Landau and Bendalak [12] found that 75% of ED staff members experience aggression from care receivers daily. Such findings reflect the unique characteristics of the ED, the “entrance gate” to the hospital, which is characterized by high crowdedness [13], long waiting durations, and other factors that can heighten care receivers’ aggressive tendencies [12] [14] [15]. Aggression, in this context, may serve one or more of three functions: an instrumental one, where the goal is to draw attention and thereby receive better and quicker service [16]; as an emotion regulation strategy, aimed at reducing stress [2]; or as a projection of the care receiver’s internal state [17].

Despite the severe implications of aggression targeted at care receivers in the ED, antecedents (and buffers) of such aggression are under-studied and poorly understood [18] [19] [20]. In the present study, we focus on aggressive tendencies, based on existing findings showing that aggressive tendencies often predict actual aggressive behavior [21] [22] [23]. Aggressive tendencies are defined as a propensity to engage in low-level aggressive behavior, such as yelling, cursing, verbally abusing staff, damaging equipment, or interfering with work processes [14]. Understanding the factors that trigger and (equally important) inhibit aggressive tendencies among care receivers is crucial for developing ways of curtailing such tendencies before they escalate into more severe aggression.

Customer satisfaction is known to be associated with lower aggressive tendencies [24] [25] [26]. Customer satisfaction is defined as the extent to which the overall service customers receive is congruent with their expectations [27]. In the health care context, care receivers’ satisfaction has an additional critical attribute, in that the service provided may have a major impact on the care receiver’s physical well-being. Hence, a bad service experience in the health care context constitutes a potential threat, increasing the care receiver’s anxiety and stress. This stress might induce aggression. Some studies in the medical context suggest that when care receivers are dissatisfied, aggression becomes their mode of communication with medical staff, especially in situations that are already characterized by communication difficulties [28], such as language barriers [29] [30]. Equally, higher satisfaction among care receivers is associated with reduced aggressive tendencies in such contexts [31].

Given the relationship between care receiver satisfaction and aggressive tendencies, an essential question is how to enhance satisfaction in health care contexts, and especially in the ED, where sources of stress such as crowdedness and long waits add to the anxiety naturally experienced by patients and their escorts, and where opportunities for miscommunication are manifold. This study considers one potential influence on care receivers’ satisfaction and on the satisfaction–aggression interaction—namely, culture. As developed countries have become more ethnically diverse—a product of growing globalization and immigration, along with changes in birth patterns [32] [33]—the (already stressful) interaction between care receivers and medical staff in such nations often involves cross-cultural communication, where staff members and care receivers are from different cultural groups. It thus behooves us to ask whether and how cultural factors may influence satisfaction levels and aggressive tendencies of care receivers in multicultural ED contexts.

In two studies, we examine cultural factors as predictors of satisfaction and aggressive tendencies among care receivers waiting in the ED of a large public hospital in Israel. We employed a survey design to elicit measures of culture, satisfaction, and aggressive tendencies among Jewish and Arab care receivers in Study 1 (N = 214), and among care receivers (N = 168) and medical staff including in Study 2.

**Research framework**

In this research we rely on the Culture-Person-Situation approach (CuPS; [34]. Under CuPS, individual attitudes and behaviors reflecting interaction between (a) the individual’s cultural affiliation; (b) individual cultural characteristics; and (c) the cultural situational setting.

*Cultural affiliation* helps to define psychological situations and create meaningful clusters of behavior according to particular logics [34]. That is, different cultures (both national cultures and ethnic cultural groups) emphasize different values, and differ in their underlying assumptions about what is normative, or rather, what violates the norm [35] [36] [37] [38]. Therefore, individuals from different cultures can differ in their satisfaction with a given social situation [34]. In addition, cultural affiliation may have implications for individual behaviors in a multicultural context. In the ED, staff generally behave according to the norms of the majority cultural group and use the majority language for communication. Thus, care receivers from minority cultural groups may experience communication difficulties, and as a result, may feel less satisfied with the treatment they receive [39]. There is also evidence that care receivers from minority cultural groups tend to receive fewer explanations and follow-ups from medical staff, compared to care receivers from majority cultural groups [29] [40] [41] [42] [43]. These circumstances may lead cultural minority care receivers to feel they are treated with less respect, which could result in lower satisfaction compared to memebers of majority cultural groups [44] [45].

*Individual cultural characteristics* include aspects of a person’s motivation, skills, and knowledge that contribute to proficiency in a culturally diverse context [46]. Two individual characteristics that are highly relevant in this context are *openness to diversity* and *cultural intelligence*. Openness to diversity (OTD) is defined as the extent to which someone holds a non-judgmental attitude about diverse cultural behaviors and expectations, and a positive perspective regarding cultural differences [47] [48]. Cultural intelligence (CQ) is defined as a capacity to function effectively in culturally diverse settings [49] [50]. Cultural intelligence is generally considered to have four dimensions: motivational CQ (interest and confidence in getting along with people of other cultures), cognitive CQ (knowledge about how cultures are similar and different), metacognitive CQ (an ability to make sense of culturally diverse experiences), and behavioral CQ (an ability to adapt verbal and nonverbal behavior to suit different cultural situations) [51]. Cultural characteristics such as CQ and OTD can be improved through training or exposure to a multicultural environment [52] [53] [54] [55].

*Cultural situational setting* refers to the presence or absence of cultural cues within the given context that can influence people’s satisfaction. One key aspect of the cultural situational setting is *language accessibility*—the degree to which a product, service or environment is available to speakers of specific language in a given area, so that they may consume such services in their mother tongue [56]. In the ED context, language accessibility—e.g., through interpreter services, signs, and written information [57] [58]—enables care receivers to understand essential medical and health care system information. Hence, ensuring language accessibility in the ED context can elevate the satisfaction of diverse cultural care receivers [57].

In a multicultural context, the outcome of any interaction is complicated by cultural disparities between the parties to the encounter—in our case, care receivers and medical staff. Recent decades have seen growing attention in health care systems to the potential implications of such cultural disparities between care receivers and care providers. In particular, many health care institutions now maintain cultural competency policies and practices—a set of behaviors, attitudes, and procedures designed to ensure that members of a system or institution can work effectively in cross-cultural situations [59] [60]. Thus far, research into cultural competency practices tends to focus on two main areas: cultural training designed to improve the cultural proficiency of medical staff (e.g., [42] [61] [62] [63] and the effects of improved language accessibility (e.g., [64] [65].

While research into cultural competency in health care institutions has provided essential insights, including with respect to care receivers' satisfaction, the literature has largely neglected one important factor: the cultural characteristics of the individuals involved, and particularly of care receivers. Like people everywhere, care receivers differ in their individual cultural characteristics, including their ability to communicate with people from other cultures and to get by in a majority culture different from their own. It stands to reason that these characteristics may affect care receivers’ satisfaction and aggressive tendencies in a multicultural ED context. Nevertheless, there is almost no consideration of this question in the existing literature.

Additionally, most existing studies relate to only one cultural factor (e.g., cultural proficiency, cultural accessibility). Almost no studies have explored the mutual contribution of such cultural factors together, or the interaction between them.

The current work helps bridge these gaps in the literature. In Study 1, following the CuPS approach [34], we examine how a cultural characteristic of care receivers (specifically, OTD) interacts with their cultural affiliation (member of a minority or majority cultural group) and with situational factors (the presence or absence of language accessibility) to affect their satisfaction and aggressive tendencies in a multicultural ED context. In Study 2 we examine how an individual cultural characteristic of care receivers (OTD) interacts with an individual cultural characteristic of medical staff (motivational CQ) to affect care receivers’ satisfaction and aggressive tendencies in this context.

For each study, we outline the relevant theoretical background and develop testable hypotheses. We then describe our method and analytical strategy, report our results, and discuss the findings. We conclude the paper with a general discussion.

**Study 1**

**Theoretical background and hypothesis development**

In this study, we explore how the interaction between openness to diversity, cultural affiliation, and language accessibility predicts care receivers’ satisfaction and aggressive tendencies in a multicultural ED.

**Care receivers’ openness to diversity and satisfaction**

Individuals with high OTD are expected to be more satisfied in a multicultural ED context. These individuals view cultural differences as positive. They are curious about other cultures, open to learning from dissimilar others, and culturally tolerant, seeking to understand diverse perspectives and to reduce problems arising from cultural misunderstandings [47] [48] [66] [67] [68] [69]. High OTD is associated with low frustration, high trust, good adjustment, and high satisfaction with multicultural interactions [46] [70] [71]. Hence, we can expect a positive relationship between care receivers’ OTD and their satisfaction with their experience in a multicultural ED.

**The moderating role of cultural setting (language accessibility) and cultural affiliation**

We suggest that language accessibility and cultural affiliation can facilitate the relationship between care receivers' OTD and their satisfaction with their experience in the ED. *Language accessibility* in the ED refers to the availability of medical and administrative information in the care receivers’ mother tongue [43] [57] [72]. Language accessibility can reduce language barriers between medical staff and care receivers, therefore helping the latter better understand ED processes [45] [64]. Moreover, language accessibility can facilitate creation of a psychologically safe communication climate, defined as an atmosphere characterized by open, supportive communication based on trust, where all parties feel encouraged to speak up [73] [74] Care receivers who are high in OTD are better-positioned (compared to those lower in OTD) to take advantage of language accessibility, increasing their satisfaction.

Although information delivery can benefit all care receivers, it is intuitive that in an environment—the ED—controlled by cultural majority language and norms [58] [75], individuals from minority cultural groups are those for whom openness to diversity and language accessibility are most relevant. Taken together, we therefore predict that the relationship between care receivers’ OTD and their satisfaction with the ED will be facilitated by language accessibility (i.e., whether care receivers have access to important information in their mother tongue); and that cultural affiliation will moderate this effect (i.e., the effect will be more significant for care receivers who belong to minority cultural groups).

*H1:* *Care receivers’ openness to diversity will be positively related to their satisfaction with their experience in a multicultural ED context. This relationship will be moderated by language accessibility and cultural affiliation, such that the relationship will be stronger when language accessibility is high and for care receivers from a minority cultural group.*

**Care receiver satisfaction and aggressive tendencies**

As described in the introduction to this manuscript, care receivers in hospitals may feel highly vulnerable, uncertain, and under strain, all of which elevate people’s tendency to engage with others in an aggressive manner [12]. Individuals who are less satisfied tend to be more aggressive in various work contexts (see the meta-analysis by Hershcovis et al., [25]), including medical settings [28] [31]. However, as noted earlier, most previous studies examined the satisfaction–aggression relationship indirectly through staff perceptions, rather than measuring care receivers’ tendency to aggress. We aim to test this relation by exploring how care receivers’ satisfaction is related to their tendency to aggress.

*H2: Care receivers’ satisfaction will be negatively related to their tendency to aggress against hospital staff in a multicultural ED context.*

Previous studies suggest that care receivers from minority groups and those with low proficiency in the majority language express less satisfaction with medical encounters than other care receivers [43]. Cultural competence can enhance their satisfaction by enabling better cross-cultural communication [42]. Following the logic of H1 and H2, we thus expect an indirect negative relationship between care receivers’ OTD and aggressive tendencies, mediated by satisfaction and that this relation will be stronger when language accessibility is high and for care receivers from a minority cultural group.

*H3: Care receivers’ openness to diversity will be negatively and indirectly related to their aggressive tendencies through satisfaction with their experience in the ED. This relationship will be stronger when language accessibility is high and for care receivers from a minority cultural group.*

**Method**

**Participants.** We tested our hypotheses among patients and escorts waiting to receive care in an ED of a large public tertiary hospital (level 1 trauma; 1130 beds) located in southern Israel. The hospital’s ED is one of the largest in the country, with the main ED unit treating more than 144,000 patients annually (about 400 per day). Israel is a multicultural society, with a Jewish majority and a non-Jewish (mainly Arab Muslim) minority, which differ in culture and mother tongue (Hebrew or Arabic). Similarly, The population the southern district is culturally diverse, with Jews—the majority cultural group—making up about 73% of the population, Muslim Arabs (nearly all Bedouin) making up about 21%, and members of other groups comprising around 6% (Israel Central Bureau of Statistics, 2016). In this study, we compare between the general Jewish majority cultural group (that speaks fluent Hebrew) and the Arab minority cultural group (that speaks fluent Arabic). We exclude in this study Jewish immigrants with poor Hebrew proficiency.

Sample included 214 care receivers (85 patients and 129 escorts; Mage = 46.62; 52% female; 40.7% belonged to the Arab minority group and the rest to the Jewish majority group).

**Procedure.** Data were collected by research assistants. The research assistants worked in teams that generally included at least one Jewish and one Arab data collector, and their interactions with participants were matched by culture.

The research assistants approached care receivers at the ED reception desk and offered them an information sheet explaining typical procedures in the ED. The conversation and the written information were in the care receiver’s mother tongue (Hebrew or Arabic).

About half the care receivers arriving in the ED during the relevant hours were approached and received the information, while the rest did not. This procedure created two groups: a treatment group of care receivers who were ensured language accessibility, and a control group who were not ensured language accessibility. The information that we gave the treatment group was the only information that care receivers got regarding typical procedures when they arrived at the ED. All care receivers get specific medical information from their appointed doctors at a point of time that was after they filled our surveys.

The data collection proper took place about 90 min after care receivers’ arrival, after the patients had met with a nurse and then a doctor for initial triage. The research assistants randomly approached care receivers waiting in the ED them to respond to a short survey (5–10 min) in their mother tongue. This survey assessed OTD, satisfaction, aggressive tendencies, cultural affiliation, language accessibility (i.e., whether they had received the information sheet), control variables, and demographics. Participants who completed the survey were thanked and offered a snack as a token of appreciation. Responses to the survey were anonymous. Respondents indicated the time they had registered at the ED (copied from the file they were given at registration) and the time at which they responded to the survey. This allowed us to match the survey data with hospital records to obtain some of our control variables, such as crowdedness of the ED or time of day (ED shift).

**Measures.** All scales were translated and back-translated from English to Hebrew and Arabic [76]. All scales were measured on a 7-point Likert-type scale (1 = “very little,” 7 = “very much”).

***Openness to diversity (OTD)*** was measured using five items based on the OTD scale of Hobman et al. [77] (e.g., “I often spend time with people from cultural groups other than my own”). Cronbach's α = .85.

***Satisfaction*** was assessed using four items based on the satisfaction scale of Glynn Mangold and Babakus [78] (e.g., “I perceive medical staff as willing to help me”). Cronbach's α = .93.

***Aggressive tendencies*** were measured through eight items from the aggressive tendencies measure developed by Efrat-Treister et al. [14]. Sample items include "What are the chances that someone in the ED will hit/yell at/curse… a care giver” Cronbach's α = .96.

***Cultural affiliation*** was obtained through self-reports (Jewish or Arab cultural groups).

***Language accessibility****.* Participants indicated whether or not they had received written information in their mother tongue.

***Controls.*** Following Carlson and Wu [79], we controlled for variables which theoretically could influence the dependent variables (satisfaction and aggressive tendencies): age; time already waited in the ED; role (patient or escort); gender; ED shift; and crowdedness of the ED. These variables have all been shown to potentially affect variables linked to aggression in the ED [12] [13] [14].

**Analytical strategy**

To test our research model, we employed latent moderated structural equation model (LMS) using Mplus 8.2 [80]. As noted by Selig and Preacher [81] (p. 147), “using latent variables has the advantage of addressing the problem of measurement error, thus deattenuating relationships among the constructs.” The first step in our analysis was to test the measurement model using confirmatory factor analysis to verify that the indicators reflected their intended latent variables. We compared a three-factor model of our latent variables (OTD, satisfaction, and aggressive tendencies) with all possible two-factor models and with the one-factor model (in which all items from all three latent variables were collapsed into a single factor). The fit of each model was assessed using two relative fit indices, namely comparative fit indexes analysis (CFI; [82]) and the Tucker-Lewis index (TLI; [83]), and two absolute fit indices, namely the chi-squared test and the standardized root mean square residual (SRMR; [84]). We evaluated these fit indexes using the traditional cutoff value of.90 for the CFI and TLI and less than .08 for the SRMR.

The second step of the LMS analysis was to test the relationships between the variables in the structural model. We used a two-step method to assess the overall fit of each LMS model, using maximum likelihood estimation, as recommended by [85]. Under this approach, the log-likelihood ratio test of a null model that does not include the latent interactions is compared with the model that includes the latent interactions to determine whether the parsimonious null model represents a significant loss in fit relative to the more complex latent interaction model. This procedure produces unbiased parameter estimates and is more efficient than other methods [86] [87], such as weighted least squares, which are based on the augmented moment matrix [88]. In our study, the latent interactions are the two-way interactions between OTD and each of the other two cultural variables (language accessibility/cultural affiliation) and the three-way interaction between them.

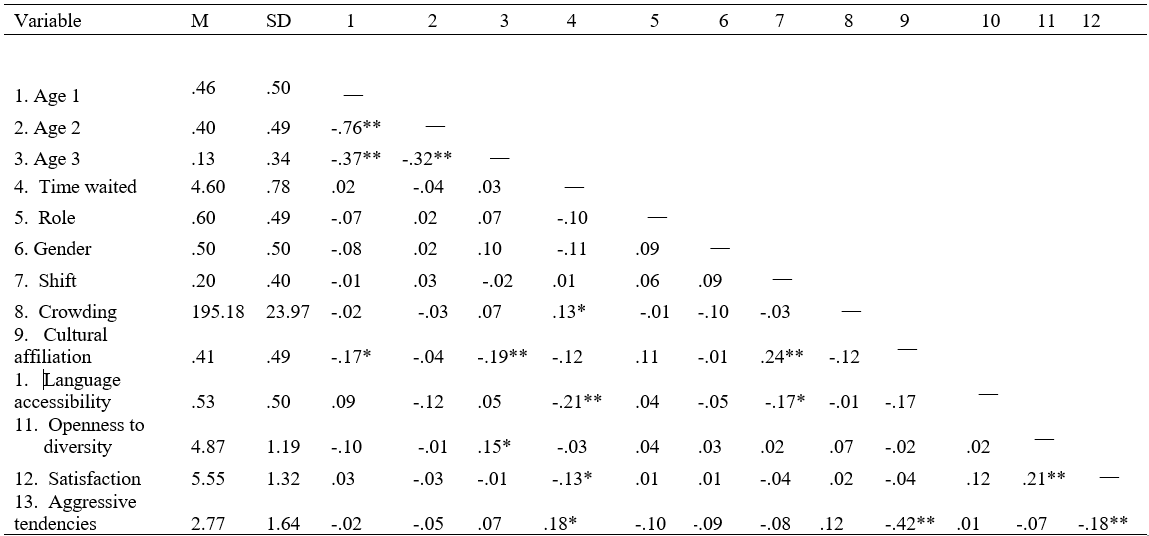
To test our hypotheses, we proceeded as follows. Hypothesis 1 predicted that care receivers’ OTD would be positively related to satisfaction, and that this relationship would be moderated by language accessibility and cultural affiliation. We tested this hypothesis by examining the three-way interaction coefficient (between OTD, language accessibility, and cultural affiliation) in the presence of the two-way interactions and all other variables. We then conducted a simple slope analysis [89] on the three-way latent interaction, exploring the nature of the interaction between care receivers’ OTD and language accessibility under the various conditions of cultural affiliation. Hypothesis 2, predicting a negative relationship between care receivers’ satisfaction and aggressive tendencies, was tested by examining the coefficients of the relationship between the two variables. Hypothesis 3 predicted a negative and indirect relationship between care receivers’ OTD and aggressive tendencies satisfaction, with language accessibility and cultural affiliation as moderators. To test this hypothesis, we conducted conditional indirect effect analysis with four conditions (with/without language accessibility X Arab/Jewish cultural affiliation) using the Mplus 8.2. bootstrapping method; CI = 95%; boot = 500.

**Results**

Table 1 presents the means and standard deviations of the study variables, as well as the correlation matrix. To test our predictions, we first fitted the baseline measurement model (model 1), with the three latent constructs (OTD, satisfaction, and aggressive tendencies). This measurement model accurately reproduced the observed covariance matrix (χ2(116) = 298.09, P < .01; CFI = .94; TLI = .93; SRMR = .058) (see Table 2). All standardized factor loadings of the latent variables on their indicators were significant (P < .01), ranging from .41 to .96. Analyses of the other possible two-factor and one-factor models show a substantial loss of fit relative to the three-factor model (e.g., CFI and TLI < .90 and SRMR > .08 in all these models). A comparison between the models’ chi-squared scores ) revealed that the three-factor model provides a better fit than all other models (P < .01).

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Table 1. Study 1: Means, standard deviations, and intercorrelations of model variables



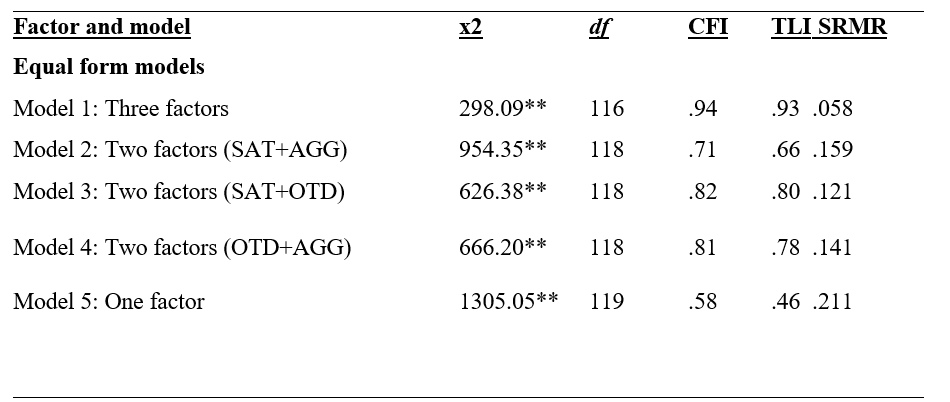
N = 214, \* P < .05, \*\* P < .01.

Notes: Age 1 = 18–29, Age 2 = 30–49, Age 3 = 50–69; Time waited: log was used; Role: Patient = 0, Escort = 1; Gender: Male = 0, Female = 1; Shift: Morning = 0; Afternoon = 1; Cultural affiliation: Jewish = 0, Arab = 1; Language accessibility: No treatment = 0, With treatment = 1.

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Table 2. Study 1: Fit indices for measurement model analyses



N = 214; \* P < .05, \* P < .01

Notes: OTD = Openness to diversity; SAT = Satisfaction; AGG = Aggression

The comparisons between Model 1 and Model 2 (P < .01), between Model 1 and Model 3 (P < .01), between Model 1 and Model 4 (P < .01), and between Model 1 and Model 5 (P < .01) were all significant, suggesting better fit for Model 1.

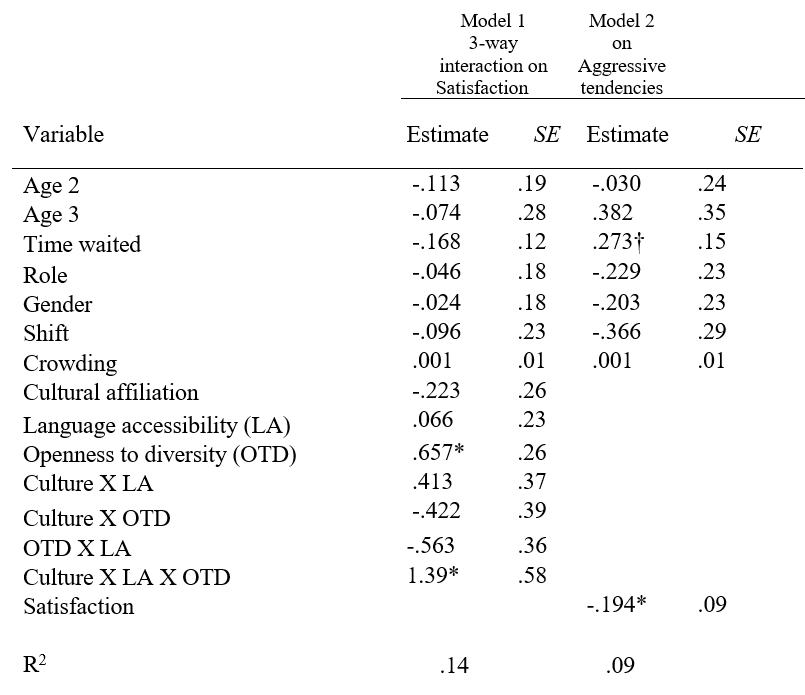
Insert Table 2 about here

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**Structural model analyses**- we first compared the model without latent interactions to the model that included the latent interactions. First, we examined the fit of the null model, which included OTD, language accessibility, cultural affiliation, the interaction between accessibility and affiliation, aggressive tendencies, and the controls (age, time waited, role [patient/escort], gender, shift, and crowding). This model demonstrated good fit (χ2(279) = 501.33, P < .01; CFI = .92; TLI = .91; SRMR = .074). Next, we added the latent interactions to the null model (OTD X language accessibility; OTD X cultural affiliation; and the three-way interaction). This model fit the data significantly better than the model without the latent interaction terms (-2 log-likelihood (5456.40); ((-2 log-likelihood = 7.86; χ2(3) = 7.86, P < .05). See Table 3 and Figure 1.

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Table 3. Study 1: Structural equation analysis for the research model



Note. N = 214; † P < .10, \* P < .05, \* P < .01

Age 1 = 18–29, Age 2 = 30–49, Age 3 = 50–69. Age 1 is the reference age criterion. Unstandardized coefficients with standard errors.

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Figure 1. Study 1: Structural equation analysis for the research model

Note: N = 214; \* P < .05; Unstandardized coefficients with standard errors in parentheses. Observed variables are denoted as squares and latent variables as circles. Control variables are not depicted.

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The results revealed a significant three-way interaction between the care receivers’ OTD, language accessibility and cultural affiliation, influencing satisfaction (B = 1.39, P < .05). To probe the nature of this interaction, we conducted a simple slope analysis (following [89]), testing the interaction between OTD and language accessibility separately for the different cultural affiliation groups. The interaction was not significant for the Jewish participants (B = -.56, n.s.) and was significant for the Arab participants (B = 1.38, P < .05). Further analysis for the Arab participants revealed that care receivers’ OTD was positively related to satisfaction only among care receivers in the language accessibility group (B = 1.06, P < .05), but not among those who did not receive explanatory information in their mother tongue (B = -.33, n.s.). Moreover, for Arabic care receivers with high OTD (1 SD above the mean), those in the language accessibility group were more satisfied then those in the no-treatment group (B = -1.08, P < .05). This effect was not found for those with low OTD (1 SD below mean; B = .12, n.s.; see Figure 2). These results support Hypothesis 1. Additionally, a negative relationship was found between care receivers' satisfaction and their aggressive tendencies (B = -.19, P < .05), supporting Hypothesis 2.

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Figure 2. Study 1: Interaction of care receivers’ openness to diversity and language accessibility on care receivers’ satisfaction for a cultural minority group (Israeli Arabs).

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Finally, to test Hypothesis 3, we conducted a conditional indirect effect of care receivers’ OTD on their aggressive tendencies through satisfaction in four conditions—2: cultural group affiliation (Jewish/Arab) X 2: language accessibility (yes/no). The results demonstrated an indirect effect only for Arabs in the language accessibility treatment group [B = -.21; 95% CI (-.58, -.03); boot = 5000]. That is, for Arab care receivers OTD was negatively and indirectly related to aggressive tendencies through satisfaction when they received explanatory information in their mother tongue, but not when they did not [B = .06; 95% CI (-.10, .40); IMM = -.27; 95% CI (-.86, -.01)]. Among Jews, no such effect was found, either in the treatment group, which was given explanatory information in Hebrew (B = -.02; 95% CI (-.21, .08)), or the control group, which was not (B = -.12; 95% CI (-.40, .01); IMM = .11; 95% CI (-.01, .45)). These results are consistent with Hypothesis 3.

**Discussion**

Our first study examines how the interaction between three cultural factors (care receivers’ OTD, cultural affiliation, and language accessibility) influences care receiver satisfaction and, in turn, aggressive tendencies. The results of Study 1 indicate that high openness to diversity enhanced satisfaction and reduced aggressive tendencies only among care receivers who belonged to the cultural minority (Arabs), and only when information about ED processes was made accessible to them in their own language.

Our findings thus far offer several insights. First, most previous studies that explored the relationship between culture and satisfaction in health care systems examined only a single cultural factor (e.g., the relationship between cultural affiliation and satisfaction or between cultural competence and satisfaction; [90] [91]. Our findings show that different aspects of culture interact with each other to explain care receiver satisfaction in the ED context. Hence, these results support the CuPS approach [34], and specifically the notion that individuals' perceptions and behaviors in multicultural contexts are complex phenomena which derive from an interaction between cultural affiliation, individual competencies and situational factors.

Second, we found that language accessibility (in the form of translation written information in their mother tongue) heightens satisfaction among care receivers from a minority cultural group. Considering the various existing information delivery methods, written information is a low-cost, easy, and efficient way to inform care receivers about the administrative and medical procedures in the ED [92]. Our findings thus suggest that ensuring accessibility to such information in the languages used by local ethnic minorities is an easy way for hospitals to improve their service to those populations. Interestingly, we found no effect of the information provided in Hebrew (the majority language) among members of the majority community, even though it is reasonable to assume that information delivery should improve satisfaction for all care receivers.

Our study also departs from much existing literature on culture and aggression in health care contexts in that we consider characteristics of care receivers that can facilitate satisfaction in a culturally diverse context. We found that the cultural competency of care receivers, in the form of OTD, plays a significant role in this process. In Study 2, we extend and deepen this investigation by considering also the interaction between the cultural proficiency of care receivers, as reflected in their OTD, and that of ED staff, as reflected in their cultural intelligence—specifically, motivational CQ.

**Study 2**

**Theoretical background and hypothesis development**

The ability of medical staff to interact effectively with diverse others is related to better communication with—and higher satisfaction among—care receivers [91]. Hence, when both care receivers and medical staff are motivated to interact with culturally diverse others, there will be an even greater increase in care receivers’ satisfaction and a concomitant decline in their aggressive tendencies.

As described earlier, cultural intelligence (CQ) refers to an individual’s capacity to function effectively in culturally diverse settings [49] [51] [93]. In the present study we are concerned with motivational CQ that is a capacity to direct and sustain energy and other resources to cope with cross-cultural situations. Individuals with high motivational CQ are intrinsically motivated to engage, experience, and master nuances of cross-cultural interactions, and have the necessary drive and self-efficacy to do so. These individuals have an interest in learning about and understanding other cultures' values and perspectives and enjoy interacting with people from different cultural backgrounds [51] [93]. As a results, individuals with high motivational CQ demonstrate high cultural adjustment [94], cultural well-being, cultural learning [95], sales skills in cross-cultural contexts [96], and have high metacognitive cultural awareness [97]. As such, medical staff with high motivational CQ should be more successful than those with low motivational CQ at helping care receivers manage stress and anxiety in a setting such as multicultural ED context.

In this study, we focus on the motivational CQ of medical residents in a primary care provider group working in the same ED as in Study 1. In Israel, as in other health care systems (e.g., [98] [99]), residents have less authority than specialists and senior doctors, but they are the backbone of the medical staff. Residents work long shifts (up to 24 hours), and most ED care receivers will be in contact with more than one resident during their stay. Indeed, in many cases, residents also serve as the face of the system for care receivers, and their ability to maintain effective professional and interpersonal relations with these clients is essential for effective treatment [100]. Hence, whether residents belong to minority or majority cultural groups, their cultural proficiency can have a powerful impact on care receivers’ satisfaction [101] [102] and, indirectly, on their aggressive tendencies [103].

Hence, in this study we hypothesize:

*H4: Care receivers’ openness to diversity will be positively related to their satisfaction with their experience in the ED. This relationship will be moderated by the motivational CQ of medical residents, such that the higher the residents’ motivational CQ, the stronger the positive relationship between care receivers’ OTD and their satisfaction.*

*H5: Care receiver’s satisfaction will be negatively related to their tendency to aggress against medical staff.*

*H6: Care receivers’ openness to diversity will be negatively and indirectly related to their aggressive tendencies through satisfaction. This relationship will be moderated by the motivational CQ of medical residents, such that the higher the residents’ motivational CQ, the stronger the (indirect) negative relationship between* *care receivers’ OTD and their aggressive tendencies.*

**Method**

**Participants and procedure**

Data were collected in the same ED as in Study 1, from two sources: medical residents and care receivers.

***Medical residents.*** Eight residents working as part of the medical staff in the ED participated voulunterely in this study (Mage= 36.00 (SD = 3.63); five females). These residents were the total sample of active ED residents during our study. Four of these residents were native Hebrew speakers, the language of the majority group in Israel, and four were immigrants who spoke fluent Hebrew and Russion. On average, care receivers had contact with three participating residents during their time in the ED (SD = 1.22, range 1–6).

***Care receivers.*** Data were collected from 168 care receivers (59 patients and 109 escorts; Mage = 43.54 (SD = 17.55); 57.4% female). The data collection from care receivers followed the same procedure as in Study 1.

**Measures.** All study tools were translated and back-translated from English [76] to Hebrew, Arabic, and Russian. All scales were measured on a 7-point Likert-type scale (1 = “very little,” 7 = “very much”).

The motivational CQ measure was completed only by medical residents. The other main measures were completed only by care receivers.

***Motivational cultural intelligence (motivational CQ)*.** Medical residents answered the five-item motivational subscale from the Cultural Intelligence Scale [51] [93]. Sample item: “I enjoy interacting with people from different cultures” (α = .93). In order to link the motivational CQ scores of the medical residents with the data from the care receivers they treated, we used hospital records that recorded which care receivers were treated by which medical residents. We then aggregated the motivational CQ scores of all residents who were in contact with a specific care receiver. The within-group coefficient of agreement between medical residents on their motivational CQ (Rwg(j); [104] revealed high agreement (mean = .95, median = .95), allowing us to use the aggregated scores.

***Openness to diversity (OTD)****.* As in Study 1 (α = .86).

***Satisfaction.*** As in Study 1 (α = .93).

***Aggressive tendencies.*** As in Study 1 (α = .96).

***Controls.*** As in Study 1. We also controlled for survey language. In this study, care receivers could fill the survey in Hebrew, Arabic, or Russian, allowing immigrants from Russian-speaking countries (which constitute the largest immigrant population in Israel) that are not fluent in Hebrew, to be included in the study.

**Analytical strategy**

The analytical strategy was as in Study 1. Hypothesis 4 predicted that care receivers’ OTD would be positively related to their satisfaction, and this relationship would be moderated by the residents’ motivational CQ. This hypothesis was tested by comparing a null model that included the relationship between OTD, satisfaction, aggressive tendencies and the controls (language, age, time waited, role, gender, shift, and crowding) to a model that also included the latent interaction between care receiver’s OTD and the residents’ motivational CQ. To probe the nature of the interaction, we conducted a simple slope analysis [89] exploring the relationship between care receivers’ OTD and their satisfaction at high (1 SD above the mean) and low (1 SD below the mean) levels of residents’ motivational CQ. Hypothesis 5, predicting a negative relationship between care receivers’ satisfaction and aggressive tendencies, was tested by examining the coefficients of the relationship between the two variables. Hypothesis 6 predicted a negative and indirect relationship between care receivers’ OTD and aggressive tendencies via satisfaction, with residents’ motivational CQ as a moderator. This hypothesis was tested by examining the conditional indirect effect of OTD on aggressive tendencies through satisfaction, at high (1 SD above the mean) and low (1 SD below the mean) levels of residents’ motivational CQ. We used Mplus 8.2. bootstrapping at 95% bias-corrected confidence intervals with 5000 replications.

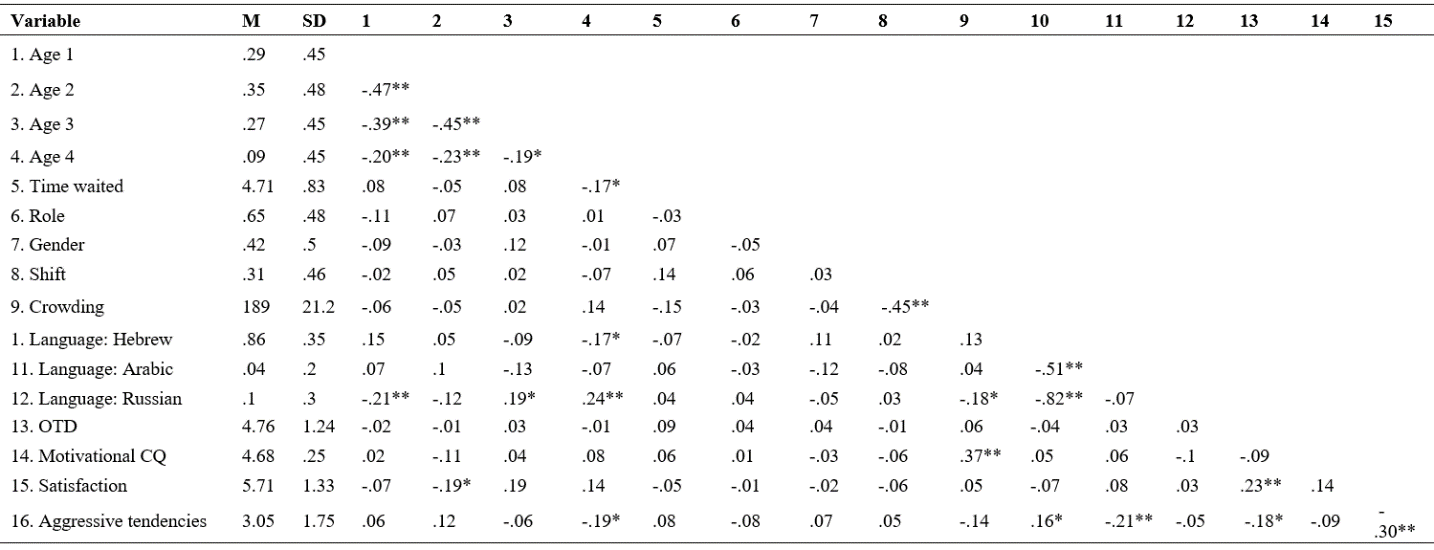
**Results**

Table 4 presents the means and standard deviations of the study variables, as well as the correlation matrix. As can be seen in Table 5, we first fitted the baseline measurement model (Model 1), consisting of the three latent constructs that were reported by care receivers (OTD, satisfaction, and aggressive tendencies). This model reproduced the observed covariance matrix accurately (χ2(116) = 294.10, P < .01; CFI = .92; TLI = .93; SRMR = .046). All standardized factor loadings of the latent variables on their indicators were significant (P < .01), ranging from .48 to .96. The other possible two-factor and one-factor models showed a substantial loss of fit relative to three-factor model (e.g., CFI and TLI < .90 and SRMR > .08 in all these models).

A comparison between the models’ chi-squared scores) revealed that the three-factor model provides a better fit than all other models (P < .01).

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Table 4 – Study 2: Means, standard deviations, and intercorrelations of model variables



Note. \* P < .05 \*\* P < .01. OTD = Openness to diversity; Age 1 = 18–29, Age 2 = 30–49, Age 3 = 50–69; Age 4 = 70+; Time waited: log was used; Role: Patient = 0, Escort = 1; Gender: Male = 0, Female = 1; Shift: Morning = 0; Afternoon = 1. Descriptive results.

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Hypothesis 4 was tested by comparing the null model to the model with the interaction. The null model (including care receivers’ OTD, satisfaction, and aggressive tendencies) demonstrated good fit (χ2(283) = 511.89, P < .01; CFI = .91; TLI = .90; SRMR = .061). The model including the interaction between care receiver’s OTD and the residents’ motivational CQ fit the data significantly better than the null model (-2 log-likelihood = 4.46; χ2(1) = 4.46, P < .05). This model revealed a significant interaction, B = -1.33, P < .05 (see Table 6 and Figure 3).

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Table 6 – Study 2: Structural equation analysis for the research model

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 1 Satisfaction | | Model 2  Aggressive tendencies | | |  | | | |
| Variable | Estimate | *SE* | | Estimate | | | *SE* | |
| Age 1 | -1.06\* | .44 | | 1.00 | | | .54 | |
| Age 2 | -1.18\*\* | .42 | | 1.19\* | | | .52 | |
| Age 3 | -.22 | .41 | | .65 | | | .50 | |
| Time waited | -.13 | .13 | | .11 | | | .16 | |
| Role | -.01 | .22 | | -.26 | | | .27 | |
| Gender | -.09 | .21 | | .12 | | | .26 | |
| Shift | -.20 | .26 | | -.10 | | | .31 | |
| Crowding | -.01 | .01 | | -.01 | | | .01 | |
| Language: Arabic | .72 | .53 | | -1.90\*\* | | | .66 | |
| Language: Russian | -.37 | .38 | | -.14 | | | .46 | |
| Openness to diversity (OTD) | .44\*\* | .14 | |  | | |  | |
| Motivational CQ (MCQ) | .34 | .47 | |  | | |  | |
| OTD X MCQ | -1.33\* | .65 | |  | | |  | |
| Satisfaction |  |  | | -.28\*\* | | | .10 | |
|  |  |  |  | |  | | |  | |
| R2 | .23 |  | .18 | |  | | |  | |
|  |  | |  | |  | | |  | |
|  |  | |  | |  | | |  | |

N = 168; † P < .10, \* P < .05, \*\* P < .01

Notes: Age 1 = 18–29, Age 2 = 30–49, Age 3 = 50–69; Age 4 = 70+. Age 1 is the reference age criterion. Hebrew is the reference language criterion. Unstandardized coefficients with standard errors.

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Figure 3. Study 2: Structural equation analysis for the research model

Note: N =168; \* P < .05., \*\* P < .01. Unstandardized coefficients with standard errors in

parentheses. Observed variables are denoted as squares and latent variables as circles. Control variables are not depicted.

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A simple slope analysis is illustrated in Figure 4. As the figure shows, care receivers’ OTD was positively related to their satisfaction level only when the residents’ motivational CQ was low (1 SD below the mean; B = .75, P < .01), but not when it was high (1 SD above the mean; B = .12, n.s.). At the same time, care receivers with low levels of OTD (1 SD below the mean) were more satisfied when medical residents had high levels of motivational CQ compared to low levels (B = .71, P < .05). This effect was not found for care receivers with high levels of OTD (B = .39, n.s.). These results demonstrate a compensation effect, such that either high OTD in care receivers or high motivational CQ in residents was sufficient to increase the care receivers’ satisfaction, and low levels of either variable could be compensated for by high levels of the other. These results only partially support Hypothesis 4, as we expected residents’ motivational CQ to facilitate the positive relationship between care receivers’ OTD and their satisfaction.

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Figure 4. Interaction of care receivers’ openness to diversity and medical residents’ motivational CQ predicting care receivers’ satisfaction.

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As predicted in Hypothesis 5, a negative relationship was found between care receivers’ satisfaction and their aggressive tendencies (B = -.28, P < .015).

To test Hypothesis 6, we checked for a conditional indirect effect of care receivers’ OTD on their aggressive tendencies through satisfaction at different levels of residents’ motivational CQ. Specifically, the effect was significant when residents had low motivational CQ (1 SD below the mean; B = -.21; 95% CI (-.54, -.02)), but not high motivational CQ (1 SD above the mean; B = -.04; 95% CI (-.21, .05); IMM = .37; 95% CI (.01, 1.72)). These results are partially consistent with Hypothesis 6, as we expected to find a conditional indirect effect. However, we expected to find an effect with higher levels of motivational CQ and not lower levels.

**Discussion**

In recent years, as migration and cultural diversity have risen [32] [33], health care systems have dedicated time and effort to enhance the cultural competence of their medical staff in order to facilitate cultural knowledge and sensitivity [105] [106]. Our second study adds to an emerging literature on this trend by exploring the interaction between the cultural proficiency of medical staff and that of care receivers as a predictor of the latter’s satisfaction and aggressive tendencies. As expected, we found that care receivers’ OTD is positively related to their satisfaction with their experience in the ED, and that medical resident’s motivational CQ moderates this relationship. However, the nature of this moderating role is not in line with our prediction. Our analysis revealed a compensation effect between care receivers’ OTD and medical residents' motivational CQ. We found that when medical residents are motivated to invest energy and resources to cope with cross-cultural situations and interactions, care receivers are more satisfied—and less likely to aggress––regardless of their level of OTD. Likewise, when medical staff exhibit low motivational CQ, high levels of OTD in care receivers can compensate for the former’s lower cultural proficiency, again leading to greater satisfaction (and, indirectly, lower aggressive tendencies) in care receivers. If neither party is culturally proficient—i.e., if care givers are not willing to invest effort to engage with culturally diverse others, and care receivers too are culturally closed-minded—the outcome is low satisfaction and higher aggressive tendencies.

These results support previous findings suggesting that cultural competency training for medical staff is potentially a potent way to enhance care receivers’ satisfaction [91]. Our findings show that this is particularly true when care receivers themselves have low cultural proficiency, as cultural intelligence in medical staff (at least motivational CQ) can then compensate for lower engagement in patients and their escorts.

In this study, we also focused a spotlight on medical residents assigned to the ED. Medical residents usually work long shifts and are involved in most interactions with care receivers [107]. However, research on their contribution to the satisfaction of care receivers is currently limited. The present study offers a point of departure for understanding the possibly unique contributions of this particular group of medical professionals.

**General Discussion and Conclusion**

Enhancing care receiver satisfaction and reducing aggressive tendencies has great economic and psychological benefits for care receivers, staff, and health care organizations. In the current research, we explored how cultural factors, alone or in interaction, can help achieve these outcomes in a multicultural ED setting. In particular, we found that ensuring language accessibility for cultural minority care receivers (Study 1), and cultural proficiency in care receivers (OTD; Study 1) and medical staff (motivational CQ; Study 2), play a strong role in enhancing care receivers’ satisfaction and reducing their aggressive tendencies. Our results suggest that ED managers can have a meaningful impact by investing resources in programs and procedures aimed at improving the cultural proficiency of staff, and creating an atmosphere of cultural sensitivity (e.g., through language accessibility) in the ED.

**Practical implications**

From a practical perspective, the findings of Study 1 suggest that delivering medical and administrative information to cultural minority groups via written material in different languages is an efficient, low-cost way to enhance care receivers’ satisfaction and reduce aggression tendencies. Indeed, we found an effect even with just a single page of information distributed at the reception desk. Moreover, today’s technology allows for multiple ways of providing such information, from old-fashioned hard copies to instant messages sent directly to care receivers’ mobile phones.

The results of Study 2 show that building up the motivational CQ of medical staff is an efficient tool for maintaining care receivers’ satisfaction and reducing aggressive tendencies within a culturally diverse ED. As discussed above, motivational CQ can be strengthened by investing in cultural sensitivity training (e.g., [53] [54]). This may be particularly important for medical residents, who usually work long shifts and are involved in most interactions with care receivers [107]. Moreover, residents are still in the early stages of their medical career, a time when strengthening their motivation to understand diverse cultural perspectives and to effectively interact with cultural minority care receivers can have a significant long-term impact. As such, we recommend that cultural training should be included in the general training of medical residents. More broadly, such training should be incorporated into all stages of medical studies.

Last, our studies support previous findings showing that low satisfaction levels among care receivers are an antecendent of aggressive tendencies. Hence, ED medical staff should be attentive to the feelings and behaviors of care receivers to the extent possible, especially in cross-cultural interactions. For example, medical staff may find it easier to treat and communicate with culturally diverse care receivers who are open to diversity. In such a positive atmosphere, the medical staff might have a higher willingness to understand the care receivers’ diverse cultural perspective and to support medical information that can contribute to care receivers’ satisfaction. However, our results demonstrate that culturally sensitive behaviors of the medical staff are most efficient in enhancing satisfaction and reducing aggressive tendencies of care receivers who are low in OTD, as those who are high can compensate on their own, for the medical staff’s insensitive cultural behaviors.

**Limitations and future directions**

Our research has several limitations that also present opportunities for future research. First, in Study 2 we limit our examination of medical staff to a small number of residents. Residents were chosen for this study because of their dominant presence in the ED. Future research is needed to understand the impact of other groups who interact with care receivers on the latter’s satisfaction and aggressive tendencies—e.g., senior doctors, nurses, medical aides, or orderlies.

Second, in both studies we examined care receivers' aggressive tendencies rather than actual behavioral aggression. Although it is extremely difficult to collect data from aggressive care receivers, we call on scholars to meet this challenge in future research.

Third, aspects of our setting limit the generalizability of our findings. For instance, we focus our spotlight on the ED context. As we know, cultural diversity exists in other health care systems and in various workplaces and industries, and it would be interesting to explore these effects in such contexts. Similarly, our studies were conducted in only one ED in Israel. We recommend future research to explore similar models in other countries.

**Conclusion**

In recent years, ED contexts are becoming more multicultural [32] [33]. Our results demonstrate that factors related to cultural affiliation, individual cultural characteristics, and cultural situational settings can affect care receivers’ satisfaction and aggressive tendencies. Hence, health care systems that embrace a broad cultural perspective may reap benefits in the form of higher satisfaction among care receivers, and lower aggression against medical staff.

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Figure 1 – Study 1: Structural equation analysis for the research model

Language accessibility

Care receiver’s cultural affiliation

1.39\* (.58)

-0.19\* (.09)

Note: N = 214; \* P < .05; Unstandardized coefficients with standard errors in parentheses. Observed variables are denoted as squares and latent variables as circles. Control variables are not depicted.

Figure 2 – Study 1: Interaction of care receivers’ openness to diversity and language accessibility on care receivers’ satisfaction for a cultural minority group (Israeli Arabs).

Figure 3 – Study 2: Structural equation analysis for the research model

Residents’ motivational CQ

-1.33\* (.65)

-0.28\*\* (.10)

Note: N =168; \* P < .05., \*\* P < .01. Unstandardized coefficients with standard errors in

parentheses. Observed variables are denoted as squares and latent variables as circles. Control variables are not depicted.

Figure 4 – Interaction of care receivers’ openness to diversity and medical residents’ motivational CQ predicting care receivers’ satisfaction.