

THE ROLE OF SENSE OF COMMUNITY AND INDIVIDUAL DIFFERENCES ON CRITICAL CONSCIOUSNESS IN IRAN

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The present study furthers our knowledge of critical consciousness within the underexplored context of Iran. More specifically, we explore a novel area of critical consciousness, which integrates relational and emotional dimensions beyond the better understood behavioral and cognitive dimensions. We administered the Critical Consciousness Scale, the Sense of Community Index-2, and a demographic questionnaire to 185 first year students. While the factor structure of both measures did not fit the Iranian sample, we did find that sharing the same needs as others promotes ideas of fairness and that feeling connected with others influences individuals to take action. Additionally, we found that the desire to fit in with the campus community deters people from engaging in socio-political action. We discuss implications for research, theory, and practice.

Keywords: critical consciousness, relationality, emotions, sense of community, Iran

1. Introduction

Critical consciousness (CC) is a cognitive, behavioral, and emotional phenomenon tied to the work of the Brazilian educator, Paulo Freire. Working with adults in the poorest regions of Brazil, he taught them to “read the world” as well as the word (Freire, 2000). Critical consciousness involves understanding the systematic and systemic nature of oppression. Awareness of injustice must be coupled with taking action to transform relations of domination. The changing self rejects notions of self-blame and creates new ways of knowing (in conjunction with others in oppressed groups) that are not dependent on the oppressor’s view of the world (Abdi, 2001). Freire (1993) described CC as:

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The critically transitive consciousness is characterized by depth in the interpretation of problems; by the substitution of causal principles for magical explanations; by the testing of one's "findings" and by openness to revision; by the attempt to avoid distortion when perceiving problems and to avoid preconceived notions when analyzing them; by refusing to transfer responsibility; by rejecting passive positions; by soundness of argumentation; by the practice of dialogue rather than polemics; by receptivity to the new for reasons beyond mere novelty and by the good sense not to reject the old just because it is old—by accepting what is valid in both old and new (p. 18).

The words of Freire (1993) reveal the breadth of his principles and the potential difficulties in operationalizing, and hence measuring, the concept of CC. As the quote suggests, CC results in a decrease in consciousness-dependency, self-blame, and learned helplessness. According to Freire (1993), CC incorporates a formation of knowledge that involves critical thinking, participation in knowledge production, and an integration of individual and the broader community's concerns.

To aid in the development of CC, Freire (2000) formed the process of education that is now called critical pedagogy. Critical pedagogy advances a participatory model of education aimed at increasing literacy and the capacity to question, to seek alternatives to the given social order, and to experience a sense of social agency. In this philosophy of education, students' lived experiences are used as the primary foundation for the curriculum. The nature of discussion is a dialogue between student and educator where everyone is both learning and teaching. Through the tenants of critical pedagogy, students learn to interpret social, political, cultural, and historical structures and how such structures impact themselves and various social groups. Critical pedagogy offers a counter to traditional and banking forms of education where knowledge flows from the teacher into the students. Freire referred to this alternative system of education as popular education.

2. Critical Consciousness

While recent advances in understanding CC are encouraging, areas of understanding remain underdeveloped. A particularly glaring issue within the literature stems from a lack of integration and shallowness of incorporation of emotions, relationality, and community. The present study is part of a suite of cross-cultural studies designed to test an expanded model of CC that includes sense of community (SOC). SOC is used to begin to understand how relational and community dimensions of CC play out. That said, we also see SOC as an important concept to explore in a range of cultural contexts.

When emotions and relationality have been incorporated into models of CC development it has been almost exclusively as political efficacy and collective identity (Watts & Hipolito-Delgado, 2015). In this study, we wanted to test an expanded role of emotions and relationality in CC to encompass a wider range of feelings and behaviors. For many scholars, emotions and interactions are inherently related phenomenon (Boler, 1999; Poletta, 2002; Summers-Effler, 2002). Included within theorized emotional and relational dimensions are, pride in previously marginalized identities (Freire, 2000), hope (Summers-Effler, 2002), love (Mustakova-Possardt, 1998) concern (Guishard, 2009), and peer and social support (Diemer & Li, 2011). Notably, these theorized emotional and relational dimensions are positive emotions in CC development,

which does not fully capture the taxing nature of working to create change. In short, various aspects of emotions (i.e., efficacy) and relationality (i.e., collective identity) are theorized as either being a component of CC (the case for the former) or driving factors in CC development (the case for the later; Jemal, 2017; Watts & Hipolito-Delgado, 2015). We attempt to uniquely contribute to our understanding of CC by integrating a more expansive view of emotions and relationality through the use of SOC.

Currently none of the measures of CC integrate an emotional or relational dimension. The measure we chose to use, the CC scale (Diemer, Rapa, Park & Petty, 2014) includes one subscale focused on critical behaviors (i.e., critical action) and two subscales focused on cognitive aspects of CC (i.e., perceived inequality and egalitarianism). In the current study, we used a well-developed concept from community psychology, SOC, to begin to understand the emotional, communal, and relational dimensions of CC. We specifically used the Sense of Community Index-2 (SCI-2; Chavis, Lee, & Acosta, 2008). Jemal (2017) highlights relational aspects of CC, including: group processes, group identity, emotional engagement, dialogue, social support, co-learning, solidarity, and interdependence. The SCI-2 specifically includes questions that relate to theorized aspects of a relational dimension of CC (e.g., Being a member of this community makes me feel good; Being a member of this community is part of my identity; Fitting into this community is important to me). The qualitative work on which this study is based found that “relations seem to help work out ambivalence and ambiguity through engagement in discussions and shared experiences” (Wallin-Ruschman, in press, pg. 18). A follow up mixed-methods study, also conducted within higher education in the United States, found that a driving factor influencing CC development was the importance of community (Wallin-Ruschman, Allegood, Grim, & Langston, 2016). Some aspect of belonging to a group seems to help facilitate CC development, at least in the United States higher education context in which they have been explored through the first author’s qualitative research. Both measures were used to enhance our understanding of CC in the commonly explored area of higher education but in the under-explored country of Iran.

3. Iranian Context: Critical Pedagogy, Sense of Community and Sociopolitical Action

Proponents of critical pedagogy argue that the dominant educational programs around the world are based on monolithic discourse, which identifies only one legitimate methodology proposed by theoreticians and experts (Abedina & Izadnia, 2013; Freire, 2000). Impeding CC in learners, this monolithic view of education results in a culture of silence and exclusion of students’ voices (Abedina & Izadnia, 2013; Freire, 2000). The same issue is raised by the advocates of critical thinking and pedagogy in Iran calling for implementing the tenets of this educational perspective in diverse educational levels in the country (e.g., Aliakbari & Allahmoradi, 2012; Ghahremani-Ghajar & Mirhosseini, 2005; Izadnia, 2011). However, the sociopolitical context within Iran poses many challenges to the implementation of critical pedagogy.

Policies in the Islamic Republic of Iran are based on Islamic law (CIA World Facebook, n.d.). While Islamic codes of clothing are enforced in public (British Foreign & Commonwealth Office, 2016), women are allowed to drive and do not have restrictions on attaining primary or

secondary education. However, they are forced to navigate through numerous other restrictions. For example, some universities ban female students from studying specific subjects like engineering and technology, married women must have permission from their husband to renew their passport, husbands may ban their wife from working if the wife working could damage his or her own dignity, and many jobs are not open to women (Blair, 2015). Despite steadily growing numbers of women earning college degrees, men are still given preference for employment because of traditional gender roles (Shavarini, 2009).

Of particular relevance to our study, the Iranian government strictly controls the type of education students receive. The top-down education system means that the Ministry of Education dictates which materials (e.g., textbooks and education activities) and assessments are used (Aliakbari & Allahmoradi, 2012; Safari & Pourhashemi, 2012). This level of planning does not allow teachers to integrate their own approach within the classroom (Sahragard, Razmjoo, & Baharloo, 2014). Notably, the educational system is not concerned with self-development, critical thought, or social progress. Textbooks on critical pedagogy do not exist and is therefore absent in teacher training (Aliakbari & Allahmoradi, 2012; Safari & Pourhashemi, 2012).

In addition to the limitations imposed by the Ministry of Education, teachers are not always willing to consider critical pedagogy within the classroom. According to Safari and Pourhashemi (2012), it is unlikely that Iranian teachers would be willing to give up their power within the classroom. Educators are believed to be the main source of knowledge within the classroom. They also found that teachers tend to have no interest in politics and controversial topics, because it may threaten their personal and professional life.

While there has been some research on critical pedagogy in Iran, we only know of two studies examining sense of community in Iran. Cicognani, Keyes, Joshanloo, and Rostami (2008) examined sense of community in relation to social participation and social well being among university students in the USA, Italy and Iran. For the Irani sample, SOC was positively related with social participation, but male students were more socially involved than females in face-to-face conversations about community issues, organizing recreational and sporting events, involvement in political activity and involvement in sports. Similarly, Barati, Abu Samah, and Ahmed (2012) found that Irani citizens who have a high SOC with their residential neighborhood are more likely to participate in their neighborhood association.

Iran continues to experience discontent among its citizens due to poor socioeconomic conditions and various human rights violations. Periodically, demonstrations are held, but the government quickly stops them (Wojcieszak & Smith, 2013). While Islam unites the people of Iran, its racial and ethnic groups have been divided. The Pahlavi regime, which was in power until 1979 held that Persian Iranians were racially superior to other groups within the country which include but is not limited to Ahwazi Arabs and Kurds. To date, policies to penalize those engaging in racial discrimination do not exist (Hamid, 2017). Activists like Rahim Hamid engage in activism for the rights of the Ahwazi Arabs. Hamid was accused of endangering national security, anti-government propaganda and activism against the regime by forming a student group on his university campus to raise awareness on Ahwazi Arab culture (Hamid, 2015).

According to United for Iran (2016), people in Iran are imprisoned for voicing their opinions, which will likely have dire consequences. According to Amnesty International (2016), women's rights activists have experienced intense interrogations with the threat of imprisonment. Incarcerated men, women, and children are subject to torture. In the discussion we reflect on how this sociopolitical context relates to the present study.

4. Hypotheses

Given our theoretical framework that a sense of community would solicit a heightened awareness of inequality among community members, a greater desire for the equal treatment and opportunities of its members, and a greater likelihood of involvement to produce fair conditions, we pose the following overarching hypothesis: Feeling a sense of community (i.e., identifying with a community, shared emotional connection, and reinforcement of each other's needs) will predict an increase in critical consciousness components (i.e., perceived inequality, egalitarianism, and sociopolitical participation) (see Figure 1).

Specifically, we predict:

Hypotheses 1. A heightened sense of community will predict an increase perceived inequality.

Hypothesis 1a. Identifying with a community will increase perceived inequality.

Hypothesis 1b. Sharing emotional connections with members of one's community will increase perceived inequality.

Hypothesis 1c. Having similar needs with members of one's community will increase perceived inequality.

Hypothesis 2: A heightened sense of community will predict an increased endorsement of egalitarianism.

Hypothesis 2a. Identifying with a community will increase endorsement of egalitarianism.

Hypothesis 2b. Sharing emotional connections with members of one's community will increase endorsement of egalitarianism.

Hypothesis 2c. Having similar needs with members of one's community will increase endorsement of egalitarianism.

Hypothesis 3: A heightened sense of community will predict greater participation in socio-political activities.

Hypothesis 3a. Identifying with a community will increase participation in socio-political activities.

Hypothesis 3b. Sharing emotional connections with members of one's community will increase participation in socio-political activities.

Hypothesis 3c. Having similar needs with members of one's community will increase participation in socio-political activities.

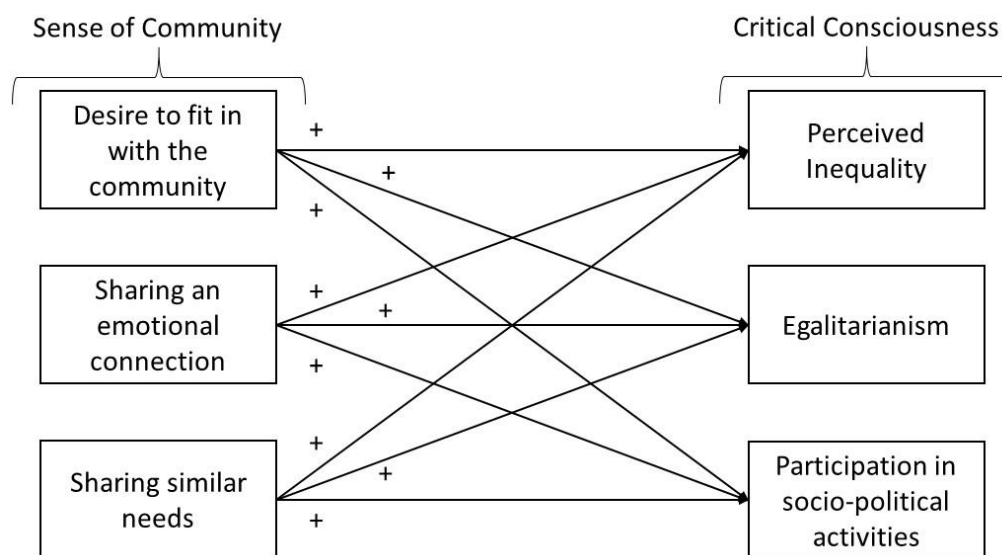


Figure 1. Hypothesized model of sense of community elements predicting elements of critical consciousness.

5. Method

5.1. Participants

A convenience sample of 185 first year students were surveyed at a single university in Isfahan, Iran. Participant age ranged from 18 to 45 years of age; the average age was 22.89 (SD = 4.85). Age was missing for one participant. Women represented 64.3% of the sample. Participants were also asked the highest level of education their parents completed. Among fathers, 15.1% completed some high school, 28.6% completed high school, 35.1% earned a bachelors degree, 17.3% earned a masters degree, and 3.8% earned a doctoral degree. Among mothers, 5.9% complete some high school, 18.9% completed high school, 44.3% earned a bachelors degree, 29.7% earned a masters degree, and 1.1% earned a doctoral degree.

Father's and mother's education was included as covariates because parent education, particularly mother's education, is an important indicator of gender equality and the impact of progressive movements in Iran, which we would expect to influence critical consciousness variables (i.e., perceived inequality, egalitarianism, and socio-political participation). Given that 84% our participants are 26 years of age or younger, parent education is important primarily because policies (e.g., First Economic, Social, and Cultural Development Plan of the Islamic Republic of Iran) and leadership (i.e., Presidents Rafsanjani and Khatami) opened doors for women's education from 1989-2005. Calculating backwards from 2015 (when our data was collected), this means that individuals between 10 and 26 years of age lived in a world where their mothers could have received an education without course restrictions or major quotas based on gender. This was not the case before or since. The expectation therefore would be that parents of our participants (who were educated during a time of relative equality) would be less likely to witness discrimination (at least based on gender), and by implication less likely to perceive

inequality (based on gender), more likely to endorse equalitarianism, and more likely to participate in socio-political spheres.

5.2. Procedure

Institutional review board approval was received from Governors State University prior to conducting the research. However, institutional review boards or their equivalent do not exist in Iran, so an Iranian researcher reviewed the measures and procedures. The research process reflected standard norms in Iran. All research materials were translated into Persian to ensure cultural and linguistic equivalence (Liang & Bogat, 1994). First, two bilingual Persian speakers independently translated the English measures to Persian. The two translators addressed discrepancies in their translation. Then, the translated Persian measures were back-translated into English by a person who did not conduct the initial translation. We compared the original English measures with the back-translated English measures to determine whether each item retained its meaning. All items were deemed to be equivalent to its original meaning.

We employed convenience sampling from a single university. We first obtained permission to collect data within classrooms from a chairperson for a Foreign Languages department at a university in Iran. We then obtained permission from all faculty members, all of whom allowed for data collection in their classroom. Once permission was granted, the fourth author collected data in 10 General English classes for first year university students. None of the students declined participation. All participants first received an information sheet and when they agreed to participate, they were given the survey measures to complete. Participants completed the measures anonymously and independently and submitted them on a table in the front of the classroom. Notably, information sheets were used instead of informed consent documents because the study was deemed by the IRB as being of no more than minimal risk.

5.3. Measures

Based on normative practice in Iran, we asked participants for a limited number of demographic questions, which included their age, gender, and the level of education their father and mother completed. In addition to the demographic questions, we administered two surveys: Sense of Community Index 2 (SCI-2; Chavis et al., 2008) and the Critical Consciousness Scale (CCS; Diemer et al., 2014). Sense of community and the CCS were analyzed using exploratory factor analyses using varimax rotation and confirmatory factor analyses in R, version 3.4.3 (R Development Core Team, 2011). Factor analysis was run to evaluate whether assumptions about dimensionality and structure from U.S.-based studies held in this sample. Although our sample size was slightly below what Comrey and Lee (1992) consider “fair” ($N = 200$) for factor analyses, we did not feel we could conduct inferential tests with any confidence without first satisfying basic psychometric assumptions. When factor definitions differ from those prescribed by the scales’ developers it should be assumed that they will not generalize beyond this sample.

Sense of Community: The SCI-2 consists of 25 items and is based on McMillan and Chavis’ (1986) theory of SOC, which is made up of membership (6 items), influence (6 items), reinforcement of needs (6 items), and shared emotional connection (6 items). Items were rated on a scale of personal endorsement from 1-4; 1 = “Not at all” to 4 = “Completely.” One additional item (i.e., “How important is it to you to feel a sense of community with other community

members?") intended to be a validating question was answered on a 6-point scale from 1 = "Prefer not to be a part of this community" to 6 = "It is very important to me to be a part of this community." From here on this variable is referred to as *SOC importance*. The SCI-2 subscales have had good reliability coefficients in past studies with Cronbach's alpha scores between .79 and .86 and it has been used internationally (Chavis et al., 2008). Higher scores on each SCI-2 subscale reflect a greater degree of the given subscale's construct.

According to Chavis et al. (2008), the SOC-2 can be calculated as a summed total score across all 24 items or summed across subscales. Confirmatory factor analyses (CFA's) showed poor fit on CFI and TLI indices for both the total score one factor model, $\chi^2(252) = 209.26, p < .001$; CFI = .80; TLI = .78; RMSEA = .06 (CI [90%] = .05 - .07, $p < .15$); SRMR = .07, and the four-factor model, $\chi^2(246) = 389.55, p < .001$; CFI = .81; TLI = .79; RMSEA = .06 (CI [90%] = .05 - .07, $p < .17$); SRMR = .07. An exploratory factor analysis (EFA) using maximum likelihood estimation and a Varimax rotation revealed that there were eight factors with eigenvalues over one that explained about 60% of the variance. However, seven of the eight factors had three items or less that loaded above the conventional cut-off of .40 (Field, 2005). Evaluations of the earlier version of this scale provided little guidance for how to continue since items failed to load according to the theorized structure even with larger samples (Chipuer & Pretty, 1999).

In accordance with the four-factor structure theorized by McMillian and Chavis (1986; see also Chavis et al., 2008) we ran an EFA that forced the derivation of four factors (see Table 1). The first factors contained six items that contained content related to fitting-in, identifying with, feeling good about, and valuing their community. The highest loading item was "Fitting into this community is important to me" (factor loading [l] = .69), therefore we labeled this factor "Fitting In." The new label was appropriate given that the item allotment did not follow the prescribed definition of any factor defined by Chavis et al. (2008). The second factor included four items related to group bonding, such as sharing important events together, caring for one another, and being hopeful about the community's future. The highest loading item in this factor was "Members of this community have shared important events together, such as holidays, celebrations, or disasters" (l = .66). Items that loaded on to this factor were all included in Chavis et al.'s (2008) prescribed dimension for "shared emotional connection," therefore that label was maintained for continuity. The third factor had four items that loaded above .40, with the highest loading item and were related to community members having similar needs, their ability to meet those needs, and having similar values. Each of these items belonged to the dimension "reinforcement of needs," as outlined by Chavis et al. (2008), and so that label was maintained for continuity. The fourth factor only had one item that loaded onto it and was therefore dropped from further analyses.

A confirmatory factor analysis testing the three factors as separate, but correlated fit extremely well, $\chi^2(74) = 77.30, p = .37$; CFI = .99; TLI = .99; RMSEA = .02 (CI [90%] = .000 - .046, $p < .976$), SRMR = .05. Mean composite scores for items within each factor were created to represent the SOC constructs. Reliability for Fitting-In was sufficient ($\alpha = .77$), but Sharing Emotional Connection ($\alpha = .63$) and Reinforcement of Needs ($\alpha = .52$) were below the conventional cut-off of .70 (John & Benet-Martinez, 2000).

Table 1. Factor loadings and eigenvalues for Sense of Community Index 2's four-factor structure within this sample (N = 185).

Items	Factors			
	I	II	III	IV
1. I get important needs of mine met because I am part of this community.				
2. Community members and I value the same things.			.41	
3. This community has been successful in getting the needs of its members met.			.56	
4. Being a member of this community makes me feel good.	.57			
5. When I have a problem, I can talk about it with members of this community.			.44	
6. People in this community have similar needs, priorities, and goals.			.59	
7. I can trust people in this community.				
8. I can recognize most of the members of this community.				
9. Most community members know me.				
10. This community has symbols and expressions of membership... that people can recognize.				
11. I put a lot of time and effort into being part of this community.	.47			
12. Being a member of this community is a part of my identity.	.68			
13. Fitting into this community is important to me.	.69			
14. This community can influence other communities.				
15. I care about what other community members think of me.				
16. I have influence over what this community is like.	.42			
17. If there is a problem in this community, member can get it solved.				.96
18. This community has good leaders.				
19. It is very important to me to be a part of this community.	.53			
20. I am with other community members a lot and enjoy being with them.				
21. I expect to be a part of this community for a long time.		.43		
22. Members of this community have shared important events together, such as holidays, celebrations, or disasters.		.66		
23. I feel hopeful about the future of this community.		.46		
24. Members of this community care about each other.		.46		
Eigenvalues	5.39	1.99	1.42	1.26

NOTE: Factors loadings below .40 not shown.

Critical Consciousness: The CCS scale (Diemer et al. 2014) is made up of 22 items measuring three subscales. The first subscale, critical reflection: perceived inequality (8 items), measures critical analysis of socioeconomic, racial/ethnic, and gendered constraints on educational and occupational opportunity. The second subscale, critical reflection: egalitarianism (5 items) measures endorsement of societal equality within society. The last subscale, critical action: sociopolitical participation (9 items), measures participation in social and political activities to change perceived inequalities. Items for perceived inequality and egalitarianism are endorsed using a 6-point Likert-type scale where lower numbers reflect stronger disagreement and higher scores reflect stronger agreement or endorsement of the construct. Sociopolitical action was rated on a 5-point Likert-type scale that was behaviorally-anchored. For each action listed, respondents could answer never, once or twice last year, once every few months, at least once a month, and at least once a week. Notably, an item in the sociopolitical participation subscale was altered so that “gay rights” was omitted. Discussion of gay rights is deemed to be taboo and retaining the item as is would have jeopardized our Irani data collector’s job security.

An EFA using varimax rotation on critical consciousness items revealed seven factors that explained about 66%, however four of those factors were largely defined by single or cross-loading items. Following the tripartite CC definition by Diemer et al. (2014), a second EFA was

run that forced a three-factor structure. While three items (#9, #14 and #17) did not load on any factors according to our cut-off (.40; Field, 2005), all items loading at or above .40 agreed with Diemer et al.'s definition except for one (item 1; see Table 2). The three factors explained about 44% of these items' variance. Interestingly, after removing the deviant item, a CFA that modeled three separate, but correlated factors revealed poor fit for the prescribed structure, $\chi^2(132) = 312.04, p < .001$; CFI = .79; TLI = .75; RMSEA = .09 (CI [90%] = .074 - .098, $p < .001$); SRMR = .09. Given that the EFA on all CC items supported the prescribed 3-factor structure, EFA's were run on each subscale to identify potential sources of misfit in the CFA, e.g., multidimensionality, rogue items.

Table 2. Factor loadings and eigenvalues for Critical Consciousness Scale's three-factor structure within this sample (N = 185).

Items	Factors		
	I	II	III
1. Certain racial or ethnic groups have fewer chances to get a good high school education.		.46	
2. Poor children have fewer chances to get a good high school education.	.43		
3. Certain racial or ethnic groups have fewer chances to get good jobs.	.56		
4. Women have fewer chances to get good jobs.	.60		
5. Poor people have fewer chances to get good jobs.	.63		
6. Certain racial or ethnic groups have fewer chances to get ahead.	.68		
7. Women have fewer chances to get ahead.	.63		
8. Poor people have fewer chances to get ahead.	.65		
9. It is a good thing that certain groups are at the top and other groups are at the bottom.			
10. It would be good if groups could be equal.		.46	
11. Group equality should be our ideal.		.75	
12. All groups should be given an equal chance in life.		.73	
13. We would have fewer problems if we treated people more equally.		.73	
14. Participated in a civil rights group or organization.			
15. Participated in a political party, club, or organization.			.76
16. Wrote a letter to a school or community newspaper or publication about a social or political issue.			.54
17. Contacted a public official by phone, mail, or email to tell him/her how you felt about a particular social or political issue.			
18. Joined in a protest march, political demonstration, or political meeting.			.48
19. Worked on a political campaign.			.41
20. Participation in a discussion about a social or political issue.			.44
21. Signed an email or written petition about a social or political issue.			.49
22. Participated in a human rights or woman's rights organization or group.			.42
Eigenvalues	3.57	3.32	2.52

NOTE: Factors loadings below .40 not shown.

Exploratory factor analyses on the sub-scale *perceived inequality* revealed that items that specified women as distinct targets of inequality loaded on a different factor than the poor or other races/ethnicities. This distinction was evidence that perceived inequality was more nuanced in our Irani sample than in U.S.-based samples. A CFA evaluating the two-factor model with factor I items (see Table 2) fit better than a single factor model, according to a Chi-square difference test, $\chi^2(1) = 19.84, p < .001$. However, the model still resulted in poor fit. A correlation matrix of factor I items showed that race/ethnicity items correlated more with each

other than with items about the poor (or with items about women). Therefore, a three-factor model that separated the poor, different races/ethnicities, and women as separate targets for perceived inequality was tested. This resulted in a significantly better fitting model than the one-factor, $\chi^2(3) = 44.68, p < .001$, or two-factor model, $\chi^2(2) = 24.84, p < .001$, and also met conventional standards of fit quite well, $\chi^2(11) = 27.23, p = .004$; CFI = .95; TLI = .91; RMSEA = .09, (CI [90%] = .05 - .13, $p = .06$); SRMR = .049. Therefore, three composite scores were created for perceived equality: towards the poor ($\alpha = .68$), toward different races/ethnicities ($\alpha = .74$), and toward women ($\alpha = .69$).

An EFA on *egalitarianism* supported the assumption of unidimensionality and also achieved good fit in a CFA, $\chi^2(2) = .83, p = .66$; CFI = 1.00; TLI = 1.02; RMSEA < .001 (CI [90%] = .000 - .11, $p = .77$); SRMR = .01. A composite score of items from factor II was therefore created ($\alpha = .76$). *Socio-political participation* broke into two factors in an EFA. One factor contained 2 items which pertained to participating in protests and human rights clubs; the highest loading item: “Joined in a protest march, political demonstration, or political meeting” ($l = .86$). The second sociopolitical factor contained 3 items pertaining to participating in a political party, writing letters about social issues, and participating in political discussions; highest loading item: “Participated in a political party, club, or organization” ($l = .73$). A CFA that tested the two-factor model achieved good fit, $\chi^2(4) = 7.60, p = .11$; CFI = .98; TLI = .94; RMSEA = .07, (CI [90%] = .000 - .15, $p = .77$); SRMR = .01, therefore composite scores were created for participation in sociopolitical demonstrations ($\alpha = .67$) and sociopolitical clubs ($\alpha = .63$).

Figure 2 presents the model of sense of community elements predicting critical consciousness elements with revised sub-scales from factor analyses.

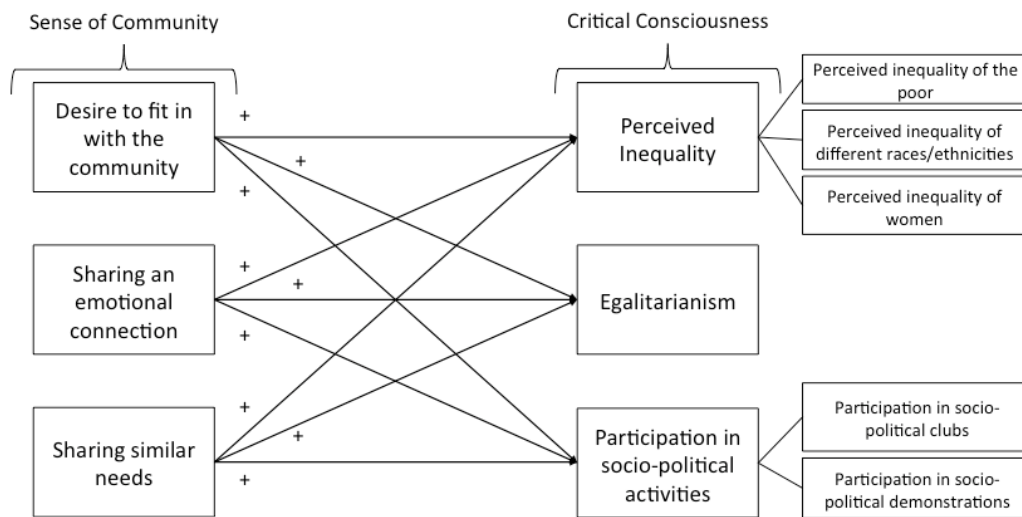


Figure 2. Hypothesized model of sense of community elements predicting critical consciousness elements with revised sub-scales from factor analyses.

5.4. Analysis

Preliminary analyses included descriptive and bivariate statistics on mean composite scores of SOC and CC sub-scales and our covariates. SOC variables included fitting in, share emotional

connection, and reinforcement of needs, along with the *SOC importance* variable. CC variables included perceived inequality sub-factors (i.e., perceived inequality of race, the poor, and of women), egalitarianism, and sociopolitical action sub-factors (i.e., participation in political demonstrations and participation in political clubs). Covariates that showed a statistically significant relationship with our outcome variables were added to the final model.

Hypotheses were tested using two path analyses on composite scores of our focal variables, where SOC sub-scales predicted CC sub-scales. The first model contained only the variables of interest while the second model controlled for covariates. All focal variables and covariates were standardized using z-scores prior to analyses. Covariates included demographic variables: age, gender, GPA, mother and father's education. The path analysis was run using the lavaan package in R, version 3.4.3. (Rosseel, 2012).

6. Results

6.1. Preliminary Statistics

On a scale from 1 to 4, participants reported that they felt a SOC between “Somewhat” (2) and “Mostly” (3) on average, with the desire of *fitting in* with the community ($M = 2.74$, $SD = .64$) being endorsed more than experiencing a *shared emotional connection* ($M = 2.51$, $SD = .68$) or a *reinforcement of needs* ($M = 2.19$, $SD = .52$). The importance of feeling a sense of community was rated slightly higher than neutral on a 6-point scale ($M = 4.38$, $SD = 1.20$). Critical consciousness factors, rated on a scale from 1 to 6, showed varying levels of endorsement. *Perceived inequality*, toward the poor, different races/ethnicities, and women, were all rated between “Slightly disagree” (3) and “Slightly agree” (4). Perceived inequality based on poverty was rated the closest to agreement ($M = 3.87$, $SD = 1.04$), followed by race ($M = 3.51$, $SD = 1.18$), and then womanhood ($M = 3.19$, $SD = 1.24$). Interestingly, men in this sample perceived inequality based on womanhood ($M = 3.55$, $SD = 1.10$) significantly higher than women ($M = 2.99$, $SD = 1.27$; see Table 3), $F(1, 184) = 8.86$, $p = .003$, $\eta^2 = .05$. Participants “Mostly agreed” ($M = 4.70$, $SD = .99$) with *egalitarianism*, or the belief in equality as an ideal. Sociopolitical action items were rated on a behaviorally-anchored scale from 1 to 5. On average, our sample participated in sociopolitical clubs ($M = 1.99$, $SD = .92$) and demonstrations ($M = 2.04$, $SD = .82$) “Once or twice last year.”

Bivariate correlations between our focal variables and our demographic variables revealed few statistically significant relationships. However, each was correlated significantly with at least two focal variables, with the exception of mother's education, which correlated with no focal variable (see Table 3). Age was positively related to perceived inequality toward women ($r = .19$, $p = .01$) and negatively related to egalitarianism ($r = -.33$, $p < .001$). GPA was positively correlated with both fitting in ($r = .24$, $p = .001$) and shared emotional connection ($r = .22$, $p = .002$). Father's education was negatively correlated with perceived inequality toward the poor ($r = -.15$, $p = .04$) and egalitarianism ($r = -.16$, $p = .03$). None of the demographic variables were correlated with reinforcement of needs, SOC importance, perceived inequality towards different races/ethnicities, or either form of socio-political participation. Although few, these correlations justify the use of these variables as covariates in our hypothesis tests.

Table 3. Preliminary descriptive statistics on key theoretical variables by gender.

Variable	Women		Men		Age	GPA	Father's Ed	Mother's Ed
	Mean	SD	Mean	SD	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Sense of community: Identify with and Fitting-In [†]	2.81*	.63	2.61	.65	-.14	.24**	-.10	-.02
Sense of community: Shared emotional connection [†]	2.57	.70	2.41	.64	-.12	.22**	.007	-.01
Sense of community: Reinforcement of needs [†]	2.17	.47	2.22	.60	-.08	.02	.008	-.06
Sense of community: Importance [‡]	4.52	1.12	4.12	1.30	-.07	.03	-.04	.03
Critical consciousness: Perceived inequality for the poor [‡]	3.78	1.12	4.05	.87	.03	-.10	-.15*	.03
Critical consciousness: Perceived inequality for certain races/ethnicities [‡]	3.53	1.18	3.46	1.19	.05	-.04	-.15	.11
Critical consciousness: Perceived inequality for women [‡]	2.99**	1.27	3.55	1.10	.19*	-.06	.006	-.02
Critical consciousness: Egalitarianism [‡]	4.73	.99	4.64	.99	-.33**	-.09	-.16*	-.002
Critical consciousness: Sociopolitical clubs [‡]	1.91	.88	2.14	.98	.08	.02	-.05	.02
Critical consciousness: Sociopolitical demonstrations [‡]	2.07	.85	1.99	.78	-.003	.09	.02	-.05
	N = 119		N = 66		N = 185	N = 185	N = 185	N = 185

Note: Results marked with an asterisk (*) denotes a mean difference significant at $p < .05$; results marked with a double asterisk (**) are significant at $p < .01$. All others are non-significant at $p < .05$.

[†] Measured on a 4-point scale

[‡] Measured on a 5-point scale

[‡] Measured on a 6-point scale

Table 4. Correlation table of focal variables (N = 185).

	SOC1	SOC2	SOC3	SOCi	CC1a	CC1b	CC1c	CC2	CC3a	CC3b
SOC1	1									
SOC2	.51**	1								
SOC3	.17*	.10	1							
SOCi	.37**	.23*	.05	1						
CC1a	-.06	.02	.02	-.06	1					
CC1b	.06	.06	-.05	.02	.49**	1				
CC1c	-.12	-.04	.05	-.05	.43**	.44**	1			
CC2	.09	-.03	.16*	.03	.30**	.13	-.06	1		
CC3a	-.05	.13	-.03	.09	.09	.04	.06	-.05	1	
CC3b	.18*	.19*	.01	.13	-.12	-.19*	-.10	-.06	.67**	1

NOTE: SOC1 = Fitting in; SOC2 = Shared emotional experience; SOC3 = Reinforcement of needs; SOCi = SOC importance; CC1a = Perceived inequality toward the poor; CC1b = Perceived inequality toward certain races/ethnicities; CC1c = Perceived inequality towards women; CC2 = Egalitarianism; CC3a = Sociopolitical action: Clubs; CC3b = Sociopolitical action: Demonstrations

* = $p < .05$; ** = $p < .001$.

Bivariate correlations confirmed some expectations within scales, but not all (see Table 4). For instance, pertaining to SOC variables, fitting in correlated with feeling a sense of shared emotional connection ($r = .51, p < .001$), reinforcement of needs ($r = .17, p = .03$), and SOC importance ($r = .37, p < .001$). Shared emotional connection correlated with SOC importance (r

= .23, $p = .002$), but not with reinforcement of needs ($r = .10$, $p = .17$), and reinforcement of needs did not correlate with SOC importance ($r = .05$, $p = .47$).

Similarly, for CC, perceived inequality composites were all correlated with one another; perceiving inequality of the poor and certain races/ethnicities ($r = .49$, $p < .001$), the poor and women ($r = .43$, $p < .001$), and women and certain races ($r = .44$, $p < .001$). However, subscales within the overall CC construct did not correlate uniformly. For example, egalitarianism correlated significantly with perceived inequality of the poor ($r = .30$, $p < .001$), with marginal significance regarding certain races ($r = .13$, $p = .08$), and near zero around womanhood ($r = -.06$, $p = .44$), suggesting that the belief in egalitarianism is primarily associated with socio-economic status. Sociopolitical actions correlated strongly with one another ($r = .67$, $p < .001$), however they did not correlate with any of the other CC subscales ($p < .05$), even with an allowance for marginal significance ($p < .10$). The one exception was that participation in sociopolitical demonstrations was negatively correlated with perceived inequality toward different races/ethnicities ($r = -.19$, $p = .009$).

6.2. Hypothesis Testing

Only two of our nine hypotheses were supported in the path analysis. Hypotheses 2c, that sharing similar needs with other community members predicts an increase in the endorsement of egalitarianism ($\beta = .14$, $p = .04$), and 3b, that sharing an emotional connection with members of one's community predicts an increase in participation in socio-political activities (i.e., clubs specifically; $\beta = .22$, $p = .002$) were supported. These relationships demonstrated that sharing the same needs as others promotes ideas of fairness and that feeling connected with others influences individuals to take action. Hypothesis 3a, that the desire to fit in with a particular community would predict involvement with socio-political activities (i.e., clubs), was statistically significant, however, the sign was in the opposite direction from our prediction ($\beta = -.20$, $p = .007$). This indicates that the desire to fit in with the campus community deters people from socio-political action. These relationships were not altered after controlling for covariates (see Tables 5 and 6).

In addition to our proposed hypotheses, we also identified several relationships between our covariates and critical consciousness elements perceived inequality and egalitarianism (see Table 6 and Figure 3). Notably, the extent to which individuals perceived inequality was influenced by their father's education, gender, and age. Father's education was negatively related to both the perceived inequality of the poor ($\beta = -.18$, $p = .01$) and of different races/ethnicities ($\beta = -.18$, $p = .01$), in that the more educated one's father, the less likely they were to perceive those groups as experiencing unequal opportunities for education and employment. In the opposite direction, older participants ($\beta = .16$, $p = .03$) and males ($\beta = .19$, $p = .01$) were more likely to perceive unequal opportunities for women in education and employment. With regard to egalitarianism, participant age ($\beta = -.31$, $p < .001$) and scholastic achievement (i.e., GPA; $\beta = -.15$, $p = .04$), were both associated with decreases in endorsement. In other words, with age and better grades, students in our sample were less likely to endorse the belief that members of their community should be treated equally as an ideal.

Table 5. Standardized estimates and significance levels for path analysis Model 1: Focal variables without covariates.

<i>Structural Model Estimates</i>	<i>Standardized estimate</i>	<i>P</i>	<i>R²</i>
Perceived Inequality of the Poor			.01
SOC: Fitting in	-.08 (.09)	.38	
SOC: Sharing emotional connection	.07 (.09)	.44	
SOC: Reinforcement of needs	.03 (.07)	.74	
SOC importance	-.05 (.08)	.58	
Perceived Inequality of different races/ethnics			.01
SOC: Fitting in	.05 (.09)	.61	
SOC: Sharing emotional connection	.05 (.09)	.59	
SOC: Reinforcement of needs	-.06 (.07)	.43	
SOC importance	-.003 (.08)	.97	
Perceived Inequality of women			.02
SOC: Fitting in	-.14 (.09)	.11	
SOC: Sharing emotional connection	.02 (.09)	.77	
SOC: Reinforcement of needs	.07 (.07)	.35	
SOC importance	-.002 (.08)	.98	
Egalitarianism			.04
SOC: Fitting in	.12 (.09)	.18	
SOC: Sharing emotional connection	-.11 (.08)	.19	
SOC: Reinforcement of needs	.16* (.07)	.03	
SOC importance	-.003 (.08)	.98	
Participation in socio-political clubs			.05
SOC: Fitting in	-.20* (.09)	.02	
SOC: Sharing emotional connection	.21* (.08)	.01	
SOC: Reinforcement of needs	-.03 (.07)	.68	
SOC importance	.12 (.08)	.13	
Participation in socio-political demonstrations			.05
SOC: Fitting in	.09 (.09)	.32	
SOC: Sharing emotional connection	.13 (.08)	.11	
SOC: Reinforcement of needs	-.02 (.07)	.79	
SOC importance	.07 (.08)	.36	

* = $p < .05$

Table 6. Standardized estimates and significance levels for path analysis Model 1: Focal variables without covariates.

<i>Structural Model Estimates</i>	<i>Standardized estimate</i>	<i>P</i>	<i>R²</i>
Perceived Inequality of the Poor			.06
SOC: Fitting in	-.07 (.07)	.32	
SOC: Sharing emotional connection	.10 (.07)	.19	
SOC: Reinforcement of needs	.02 (.07)	.74	
SOC importance	-.04 (.07)	.74	
Father's education	-.18* (.07)	.01	
Mother's education	.04 (.07)	.60	
Gender (male)	.10 (.08)	.18	
Age	.04 (.08)	.61	
GPA	-.07 (.08)	.34	
Perceived Inequality of different races/ethnics			.06
SOC: Fitting in	.04 (.07)	.58	
SOC: Sharing emotional connection	.07 (.07)	.33	
SOC: Reinforcement of needs	-.04 (.07)	.55	

SOC importance	-.02 (.07)	.82	
Father's education	-.18* (.07)	.01	
Mother's education	.11 (.07)	.12	
Gender (male)	-.03 (.08)	.71	
Age	.08 (.08)	.26	
GPA	-.06 (.08)	.45	
Perceived Inequality of women			.09
SOC: Fitting in	-.12 [†] (.07)	.10	
SOC: Sharing emotional connection	.04 (.07)	.57	
SOC: Reinforcement of needs	.07 (.07)	.36	
SOC importance	.02 (.07)	.74	
Father's education	-.04 (.07)	.55	
Mother's education	-.03 (.07)	.71	
Gender (male)	.08 (.08)	.26	
Age	-.06 (.08)	.45	
GPA	.03 (.08)		
Egalitarianism			.18
SOC: Fitting in	.10 (.07)	.13	
SOC: Sharing emotional connection	-.10 (.07)	.15	
SOC: Reinforcement of needs	.14* (.07)	.04	
SOC importance	-.03 (.07)	.71	
Father's education	-.10 (.07)	.14	
Mother's education	.001 (.07)	.99	
Gender (male)	-.04 (.07)	.60	
Age	-.31* (.07)	<.001	
GPA	-.15* (.07)	.04	
Participation in socio-political clubs			.12
SOC: Fitting in	-.20* (.07)	.007	
SOC: Sharing emotional connection	.22* (.07)	.002	
SOC: Reinforcement of needs	-.03 (.07)	.67	
SOC importance	.14 [†] (.07)	.06	
Father's education	-.09 (.07)	.23	
Mother's education	.03 (.07)	.63	
Gender (male)	.14 [†] (.08)	.06	
Age	.08 (.08)	.26	
GPA	.06 (.08)	.47	
Participation in socio-political demonstrations			.04
SOC: Fitting in	.09 (.07)	.25	
SOC: Sharing emotional connection	.13 [†] (.07)	.08	
SOC: Reinforcement of needs	-.02 (.07)	.78	
SOC importance	.08 (.07)	.30	
Father's education	.03 (.07)	.65	
Mother's education	-.05 (.07)	.47	
Gender (male)	-.01 (.08)	.91	
Age	.03 (.08)	.71	
GPA	.03 (.08)	.69	

* = $p < .05$; [†] = $p < .10$ (marginal significance)

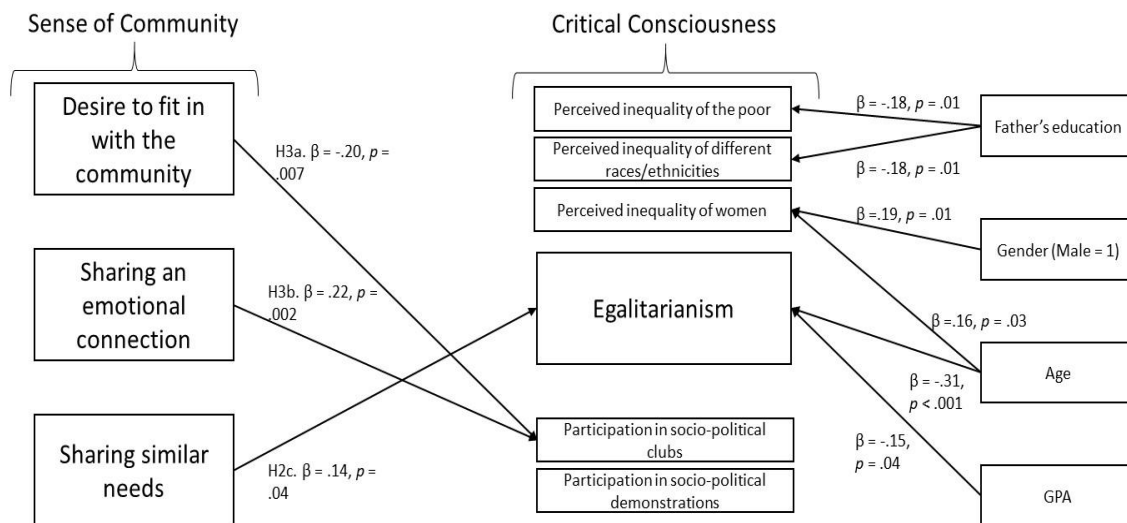


Figure 3. Path analytic results for our hypothesized model of sense of community elements predicting critical consciousness elements, controlling for covariates (only significant results displayed).

7. Discussion

The concept of CC is an important goal of many education and action projects within the field of community psychology. However, gaps exist within the understanding of relational and emotional components of CC. Recent advances in the area have led to the creation and increasing use of quantitative CC measures. However, as we begin to learn more about the concept the limitations of the quantitative measures become more apparent.

The primary cognitive component of CC, conceptualized in the CCS as perceived inequality, is the most commonly discussed and probably the most well understood aspect of CC (Watts & Hipolito-Delgado, 2015). This greater theoretical insight likely has resulted in a subscale with greater predictive validity than the other subscales. Our results confirm Diemer, McWhirter, Ozer, and Rapa's (2015) finding that the CCS should not be calculated as one composite score but rather, as three separate subscales. This finding is inline with the theory of CC, which suggest that a person may be at different levels in the different dimensions of cognition (perceived inequality), action (sociopolitical participation), and emotion (not measured by the CCS; Wallin-Ruschman, 2014).

A particularly important outcome from the current study is the finding that the CCS subscale of perceived inequality functions better when divided into areas of inequality (e.g., race, gender, poverty). This finding agrees with our theory and recent findings (Diemer et al., 2015) that the cognitive component of CC likely exists at different levels in regard to understanding of different types of oppression. For example, an individual may have a strong understanding of sexism but lack an understanding of racism. That said, we did find that the CCS perceived inequality subscales (i.e., poverty, race/ethnicity, womanhood) did correlate suggesting some relationship between these different aspects of the cognitive component of CC. Questions could be added to measure perceptions around disability, age, religion, nationality, or intersectionality. When considering what types of awareness of inequality or critical action to measure in the scale,

cultural milieu will be an important consideration; we were required to remove the one question from the CCS that dealt with sexual orientation because of the highly taboo and potentially dangerous nature of this topic in Iran.

Interestingly, the prescribed SCI-2 structure as theorized did not work in the Iranian context. Our study asked participants to focus on the college community when asking about SOC. Asking individuals to focus on that specific community may have a different meaning for more collectivist cultures (Patka, Wallin-Ruschman, Murry, & Minich, 2017) such as Iran, where SOC may be applied to a variety of other collectives, as opposed to more individualistic cultures like the United States. That said, some of the issues with the SCI-2 are likely specific to the community we have asked students to apply the measure to, i.e., the college community. Previous research suggests that within the college setting different types of relationships (e.g., other students vs. instructor) had slightly different roles to play in development of CC (Wallin-Ruschman, 2014). The SCI-2 does not have a mechanism to address these differences. Further, the freshman students may not have had sufficient time to develop a well-rounded sense of community on their campus.

Given the sociopolitical context of Iran, the campus community likely differs substantially from that in the United States. Whereas engaging in justice oriented events is not uncommon on higher education campuses in the United States, the decreased involvement in demonstrations in Iran should not be surprising. After the 2009 elections in Iran, activists and citizens reacted through what is now known as the Green Movement, which involved thousands of people protesting on the streets of Tehran. The Iranian government reacted to the Green Movement by intimidating and arresting journalists and activists to prevent information on the movement spreading internationally. Iran continues to experience discontent among its citizens due to poor socioeconomic conditions (Faghihi, 2017) and various human rights violations. Periodically, demonstrations are held, but the government quickly stops them (Wojcieszak & Smith, 2014).

Workings toward a better understanding of the critical action component is an important next step in theorizing and measuring CC (Watts & Hipolito-Delgado, 2015). Resistance to oppression and the range of actions evoked to combat domination necessarily vary from context to context. The CCS ask about more traditional forms of advocacy and activism but does not offer much in the way of understanding how individuals might be using aspects of New Social Movement (Melucci, 1988), strategies such as, prefigurative politics, relationship building, identity, and culture to create and empower social change. The measurement of action in the CCS also does not “count” subtle forms of resistance (Swanger, 2007) that might be more common in highly controlled or repressive contexts, such as Iran. Future work with the CCS could consider how the questions asked fit with local contexts.

We predicted that sharing similar needs with other community members would relate to higher levels of the cognitive components of CC. Our data supports a connection between similar needs with community members and one cognitive component- an increase in endorsement of egalitarianism. This component of SOC included questions relating to shared values, getting needs met by the community, talking about problems in the community, and sharing similar needs priorities and goals. Participants that felt this connection to the college community had higher levels of ideas of fairness.

Our theory also suggests there is a relationship between emotions and the development of CC. While the current measure of CC does not account for an emotional dimension, the sharing emotional connections with members of one’s community did predict an increase in sociopolitical activities, i.e., participation in clubs. As discussed above the lack of relationship

with demonstrations may be because of the negative and dangerous governmental response to this form of action. The measurement of shared emotional connection included items related to sharing important events, community members caring about one another, feeling hopeful about the future of the community, and expecting to be a part of the community for a long time. Having community members that feel emotionally connected with other members being more likely to engage in some types of critical action does support our theorizing that relationality is a driver of CC. This connection to critical action is particularly compelling as this is often the lowest or least changed dimension in CC research. That said, our exclusive focus on the college community and the fact that the findings relate specifically to involvement in clubs (a form of activism probably most common on college campuses) means these results have limited generalizability. Further, the inclusion of hopefulness in this component might provide entry into future research on the role of hope in CC. There may very well be an emotional and relational driver to the development of some aspects of CC but future research should test these relational and emotional dimensions using another measure or amending current CC measures to include these components. Additionally, future research should expand outside of the college community.

While we did find a significant connection between desire to fit into the community and engagement in sociopolitical action particularly clubs, this relationship was negative- the opposite of what we hypothesized. United States college and university campuses currently, and historically, have been context of political action and consciousness raising. This connection between progressive politics and higher education maybe absent in the government controlled universities of Iran. Valuing fitting in to the community may drive more conservative tendencies in this context than we initially expected. That said, how the different components of SOC in one context drive opposite relationships to engagement in collective actions seems a fruitful area for future mixed methods research and research on CC in more controlled and/or conservative context.

We do want to briefly note that in our sample we found only one (i.e., fathers education) significant findings related to the poverty component of the perceived inequality CC subscale. It is possible that with the high level of unemployment in Iran (CIA World Facebook, n.d.) coupled with economic sanctions against the country (Faghihi, 2017), everyone may be perceived as economically disadvantaged so inequalities related to wealth and income may be less apparent. Future research should explore perceived inequality in regard to poverty through qualitative methods to better understand economic inequalities specific to the Iranian context

For the egalitarianism subscale we did find that age and having better grades were a significant negative predictor. In this cultural context, older individuals and students with better grades were less likely to support egalitarianism. Students that are able to receive better grades may come to believe that this should afford them a higher status. A belief in meritocracy may grow with age and/or scholastic achievement as these individuals move towards a belief in rewards for hard work and away from a broad endorsement of equality. However, older people and males were more likely to perceive unequal opportunities for women in education and employment. These findings may reflect Iranian society where age and being male provides more opportunities to observe settings and opportunities where women are not present to the extent men are.

We did find that level of fathers' education negatively predicted perceived inequality related to poverty and race. Given the social structure and lack of opportunity for even educated women in Iran, fathers level of education would be a better predictor of economic security as compared

to mother's level of education. We cannot be sure of what is driving this relationship in our Iranian sample, an intersectional perspective could help us to posit hypotheses. Those with money not believing in the existence of inequality related to wealth and race could be driven by a lack of knowledge or exposure to different others, belief in meritocracy, or trying to avoid cognitive dissonance.

8. Conclusion

Much of the previous research on CC has been qualitative in nature and has focused on the role of context in its development, with most research being conducted in urban American settings (e.g., Campbell & McPhail, 2002; Carlson, Engbretson & Camberlain, 2006; Stewart, Riecken, Scott, Tanaka, & Riecken, 2008; Watts & Abdul-Adil, 1998; Watts, Griffith & Abdul-Adil, 1999). As the field moves to quantify and measure this phenomenon it is worth considering what this lack of diverse contextualization means. Our Iranian context impacted our data in some expected and unexpected ways. We hope to continue exploring the measurement of CC in international context but we have learned that modifications of the existing measures of both CC and SOC are needed and may need to be culturally specific. While it is an exciting development that measures of CC now exist, these measures may be too simplistic and/or unidimensional to gauge changes in the different dimensions of CC.

Beyond an increased understanding of these two measures, our findings offer some insight into our proposed model of CC as the highest level of SPCHC. The findings of the present study suggest that relationality and emotions play a role in CC, future research could further decipher the relationship as either antecedent of CC and/or dimension of CC. Future research could investigate emotions and relationality using a concept other than or in addition to SOC. Emotions and the role of relationships might also be incorporated into current or future measures of CC development. Mixed methods studies seem to be particularly needed in the field of CC research so that we can further understand the role of culture and context but also began to test and amend some of the qualitatively developed theories.

Like any research study, this study includes limitations to consider when interpreting findings. First, our sample posted limitations for our study. Our sample size was small; we were just under the recommended sample size for some of our statistical tests and we had limited statistical power. Relatedly, our sample was limited to first year students at a single university, which limits the external validity of our study. Our sample was also cross-sectional, so we were unable to examine the development of SOC and CC overtime. Second, it is possible that our U.S. based measures missed dimensions of CC development, specifically aspects important within Iranian culture. Qualitative research can aid in the discovery of such aspects while furthering our understanding of our exploratory results. For example, one particularly unexpected finding was that men acknowledged more gender inequality than women. We would have expected women to acknowledge gender inequality given the restrictions they face solely based on their gender (Blair, 2015). While, our sample was made up of first year students who may not be fully aware of the scale of gender inequalities compared to females further along in their education. Some of our analyses resulted in marginal significance, which leads us to believe that these variables require further exploration in Iran. It is also possible that variables that did not yield significant

results did not fully capture the nuances manifested in Iranian culture and require a more culturally anchored approach to research.

Given that measures to understand CC development are limited and that none are grounded in Iranian culture, the present study makes unique contributions to our knowledge of CC development in Iran. Examination of our results and discussion point out recommendations to improve our understanding of CC development through integration of component parts of CC that go beyond the cognitive and behavioral components explored in most other CC research.

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