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ORIGINAL ARTICLE

Sense of coherence and depressive symptoms among low-income Bedouin women in the Negev Israel

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Abstract

Background: Higher sense of coherence (SOC) has been associated with lower depression in Western societies; however, it is not clear whether this association manifests similarly in non-Western cultural contexts.

Aims: To examine the associations between different levels of SOC and depressive symptoms (DS) among indigenous-minority Arab Bedouin women in Israel and explore possible explanatory variables for this association.

Methods: We conducted face-to-face interviews with 464 women (aged 18–49 years). DS was measured based on the Center for Epidemiologic Studies Depression Scale. We used the SOC-13 questionnaire and conducted path analysis using Structural Equation Modeling to examine the contribution of two levels of SOC (low/high) to predict DS beyond psychological resources and socioeconomic position.

Results: The mean score of SOC was 3.42, standard deviation (SD) = 1.15. While high SOC (mean = 4.38, SD = 0.66, range = 3.5–6.38) was positively and significantly associated with DS ($r = 0.46$), SOC was not associated ($r = 0.02$) with DS in the low SOC group (mean = 2.4, SD = 0.56, range = 1–3.42).

Conclusions: Relationships between high versus low SOC and DS among Bedouin women differ from those found in Western societies. This raises questions about the use of SOC as a universal tool in different cultural contexts.

Keywords

Depressive symptoms, minority women, sense of coherence, specific cultural context, universal

History

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Introduction

Sense of coherence (SOC), a cognitive orientation viewing life as comprehensible, manageable and meaningful, has been proposed by Antonovsky as the core concept of the salutogenic model (Antonovsky, 1987). This model focuses on positive health and psychological resources that maintain health when people face stressful life events (Antonovsky, 1987). Studies have shown that higher SOC is associated with better health (Suominen et al., 2011). SOC has also been found to protect from anxiety and mental illness (Richardson & Ranter, 2005) and has been associated with psychological resources, such as social support and coping (Nilsson et al., 2000).

Studies examining how SOC interacts with depression suggest that higher SOC is associated with lower depression (Amirkhan & Greaves, 2003; Konttinen et al., 2008). However, SOC scores could not predict depressive symptoms (DS) or a diagnosis of depression among Kosovan refugees in Sweden (Roth & Ekblad, 2006). This raises questions about the association between SOC and depression in different groups and contexts. Antonovsky (1987) considered SOC a universal construct measuring a global life orientation. He argued that the historical–cultural sources for the development of SOC are also universal and viewed culture as the foundation for the development of generalized resistance resources against stress. Thus, to Antonovsky, SOC is cross-cultural, but coping behaviors depend on the cultural context. Yet findings concerning the association of SOC and health in different cultural contexts are inconsistent (Eriksson et al., 2012). For example, research among the Sami ethnic minority in Sweden showed associations between SOC and quality of life that were similar to those in the general population (Daerga et al., 2008). Meanwhile, SOC was low among the Roma population in Sweden who rated their health as poorer compared to the general population (Hassler & Eklund, 2012). Furthermore, a study among Aboriginal people in Canada showed no associations between SOC and health (Andersson & Ledogar, 2008), suggesting that SOC might vary by cultural settings (Eriksson et al., 2012).

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The cultural context of this study is that of Arab Bedouin women. Bedouins are an indigenous minority who lived in the Negev (Al Naqab) for many decades before the establishment of the state of Israel. They are now part of the Arab minority in Israel, which makes up about 18% of the state's population. Bedouins underwent many transitions following the establishment of Israel, including massive confiscations of lands by the government and a shift in their economic base, from herding to semi-manual labor. Today, the Bedouin localities in Israel are characterized by high poverty and unemployment (Abu-Saad, 2008). Economic transitions were accompanied by social structure changes, particularly in women's roles within extended families (Abu-Rabia-Queder, 2008). Arab culture is highly collectivist and has been described as patriarchal and authoritative, which might be associated with adverse psychological health for women (Cwikel et al., 2003). Generally, Arab women in Israel have higher depression compared to their Jewish counterparts (Kaplan et al., 2010). However, it is not clear how SOC, which has been shown to protect against depression (Richardson & Ranter, 2005), associates with depression among Arab women. So far, research on SOC among Muslim Arab men and women (Cohen & Savaya, 2003), Bedouin Arab and Jewish adolescents (Braun-Lewensohn & Sagy, 2011) and Arab and Jewish students (Abu-Kaf & Priel, 2012) has found lower levels of SOC among Arabs compared to Jews. But the scarcity of research examining associations between SOC and depression in minority groups or differences in SOC levels between minority and majority groups led to this study. Our aim was to examine the associations between different SOC levels and DS among indigenous minority Arab Bedouin women in Israel.

Methods

Data were obtained from a larger study conducted with Bedouin women in southern Israel (Daoud et al., 2013). This study was approved by the Institutional Ethics Committee of the Soroka University Medical Center after obtaining permission from the Ministry of Health, Southern District.

Design

The cross-sectional survey was conducted among Bedouin mothers (ages 18–49 years) visiting 14 Maternal and Child Health clinics in southern Israel between July 2008 and January 2009. Mothers were interviewed face-to-face using a structured questionnaire after signing informed consent forms. The response rate was 86%.

Participants

The study sample compromised 464 women. Mean age was 27.9 (standard deviation [SD] = 5.99) years. Most women had low socioeconomic position (SEP). For about 40%, the main source of family income was social allowances. Regarding educational achievement, 52% had less than high school, and about one-third could not read or write at all (Table 1).

Table 1. Characteristics of the sample.

	N (mean, SD)	*N*	%
Age	457 (27.9, 5.99)		
Depressive symptoms	462 (7.11, 4.54)		
Sense of coherence	462 (3.41, 1.15)		
Social support	461 (3.21, 1.10)		
Mastery	462 (2.76, 0.61)		
Main source of income			
From work		280	60.3
Social allowances		184	39.7
Women's education			
0–8 years		147	31.7
9–11 years		94	20.3
12 years		145	31.3
13+ years		78	16.8
Literacy – ability to read and write in Arabic			
Knows well		312	68.0
Does not know or knows less		147	32.0

Instruments and measures

DS questions were based on the short form scale of the Center for Epidemiologic Studies Depression Scale (CES-D), which includes a seven-item screening questionnaire on DS in the past week (Radloff, 1977). Women were asked to rate each item on a scale in response to the question: ''How often you have felt this way during the past week'': 0 = rarely or none of the time (less than one day), 1 = some or a little of the time (1–2 d), 2 = occasionally or a moderate amount of time (3–4 d) and 4 = most or all of the time (5–7 d). CES-D scores ranged from 0 to 21; higher scores indicate having more DS. Cronbach's alpha was 0.81.

We measured SOC with a short-form 13-item scale (SOC-13) (Antonovsky, 1987) that utilizes a seven-point Likert scale, ranging from 1 to 7. High scores are analogous with a high SOC, indicating better coping capacity. The items relate to three dimensions of SOC: comprehensibility, meaningfulness and manageability. Chronbach's alpha of SOC in this study was 0.87.

Social support was measured with a six-item scale encompassing material, emotional and informational support. Cronbach's alpha was 0.87. Mastery assessed the ability to control life events and included a seven-item scale (Pearlin & Schooler, 1978).

Finally, we determined SEP based on: (1) family source of income; (2) women's education and (3) literacy or how well a woman reads and writes in Arabic.

Statistical analysis

We examined the distribution of variables and calculated the internal consistency (Cronbach's alpha) of the scales: SOC, DS, social support and mastery. We then examined the correlations between these scales. We dichotomized SOC into high and low according to the average score, since we were interested in determining whether these levels relate differently to DS. We compared the means and SDs of the scales (DS, social support and mastery) in relation to the two groups of SOC using *t*-test. We compared the demographic variables and SEP for the two SOC groups using chi-square test.

As we hoped to explore the variables that could explain the associations between SOC and DS, we used Structural Equation Modeling (SEM) to conduct path analysis. SEM allows complete and simultaneous tests of all relationships involved in multiple regression analyzes. This approach is designed to explore relationships in complex and multidimensional phenomena (Ullman & Bentler, 2012). We conducted the SEM using AMOS 5.0 (Arbuckle & Wothke, 1999) with maximum likelihood estimation to test the hypotheses that (SEP) (education, source of income and literacy) as well as personal psychological resources (social support and mastery) contribute to DS at two different SOC levels: low versus high. We used multi-group analyzes to compare the contribution of SEP and personal psychological resources to DS in each group. Each of these variables was used separately as a manifest variable. For DS (the dependent variable), a latent variable was created using seven items of the CED-S short form scale. Model fit of the data was assessed using the ratio of chi-square to degrees of freedom (χ^2/df); the incremental fit index (IFI); the comparative fit index (CFI); and the root mean square error of approximation (RMSEA). Acceptable fit is indicated by a χ^2/df ratio as high as five, IFI and CFI values equal to or greater than 0.90 and a RMSEA of less than 0.08. The indices were mostly adequate for the overall model; $\chi^2_{(104)} = 313.5$, $p < 0.001$; $\chi^2/df = 3.01$; CFI = 0.79; IFI = 0.80; RMSEA = 0.07. Significant differences between the models of the two groups could lead to non-adequate CFI or IFI parameters.

Results

The total mean score for SOC was 3.41, SD = 1.15, and for DS = 7.11, SD = 4.54 (Table 1). SOC was significantly and positively correlated with DS ($r = 0.52$); however, it was negatively correlated with social support ($r = -0.28$) and mastery ($r = -0.47$) (Table 2). Dividing SOC into high and low, the mean score for high SOC was 4.38, SD = 0.66 (range 3.5–6.38), and for low SOC, the mean score was 2.4, SD = 0.56 (range 1–3.42). The most striking differences emerged when comparing the associations between SOC and DS; while high SOC was positively and significantly associated with DS, low SOC was not associated with DS (Table 3). Comparing the two SOC groups, women with low SOC, who composed 48.7% of the sample, had lower levels of DS and higher levels of social support and mastery. The other 51.3% of the women had high SOC scores, higher levels of DS and lower levels of social support and mastery. However, we found no significant differences between the two SOC groups in association with SEP (income, education or literacy) (Table 4).

Table 2. Correlations between continuous variables.

	Sense of coherence	Depressive symptoms	Social support	Mastery
Sense of coherence	1 462	0.515[a] 462	−0.279[a] 461	−0.470[a] 462
Depressive symptoms		1 462	−0.431[a] 461	−0.519[a] 462
Social support			1 461	0.478[a] 461
Mastery				1 462

[a]$p = 0.001$.

Path analysis of the associations between SOC and DS

The final models, as presented in Figures 1 and 2, show significant links only in one SOC group. In spite of several minor similarities, we found meaningful differences. First, the overall variance that explained DS was different for low and high SOC groups: 45% for high SOC (Figure 1) and 17% for low SOC (Figure 2). In both SOC groups, SEP did not have direct association with DS, and it was linked in opposite directions to the different psychological resources (social support and mastery). Although the psychological resources of social support and mastery were associated with DS in the same direction in both SOC groups, the strength of the relationships was significantly different. We compared the effects of SEP on psychological resources, and psychological resources on DS using a nested model. Thus, we assigned equality constraints among groups for each effect, allowing comparison of the constrained model fit with the free model fit.

As for the effect of the resource of income, it was significant in explaining SOC in the high SOC group only. Literacy was significant in explaining social support in both SOC groups. Education had no significant associations and was dropped from the models.

Our investigation of indirect effects showed weak relationships between SEP and DS in both groups. The indirect effects of literacy *via* social support on DS for the low SOC group were 0.07, and 0.03 for the high SOC group.

Table 3. Mean and SD for depressive symptoms, social support and mastery for the low- and high-SOC groups.

	Low SOC ($N = 219$)[a] Mean (SD)	High SOC ($N = 231$)[a] Mean (SD)	*t*-test
Depressive symptoms symptoms	5.26 (0.23)	9.01 (0.31)	−9.68[b]
Social support	3.44 (1.10)	2.95 (1.05)	4.83[b]
Mastery	3.00 (0.54)	2.55 (0.60)	8.55[b]

[a]There might be slight changes in the numbers for the different associations due to missing data.
[b]$p < 0.001$.

Table 4. Socioeconomic position variables by low- and high-SOC groups and for the total sample.

	Low SOC *N* (%)	High SOC *N* (%)	χ^2 test
Main source of income			0.17
Work	135 (61.6)	138 (59.7)	
Social allowances	84 (38.4)	93 (40.3)	
Women's education			0.95
0–8 years	68 (31.1)	75 (32.5)	
9–11 years	46 (21.0)	45 (19.5)	
12 years	65 (29.7)	75 (32.5)	
13+ years	40 (18.3)	36 (15.6)	
Literacy – ability to read and write in Arabic			0.24
Knows well	150 (69.1)	154 (67.0)	
Does not know	67 (30.9)	76 (33.0)	

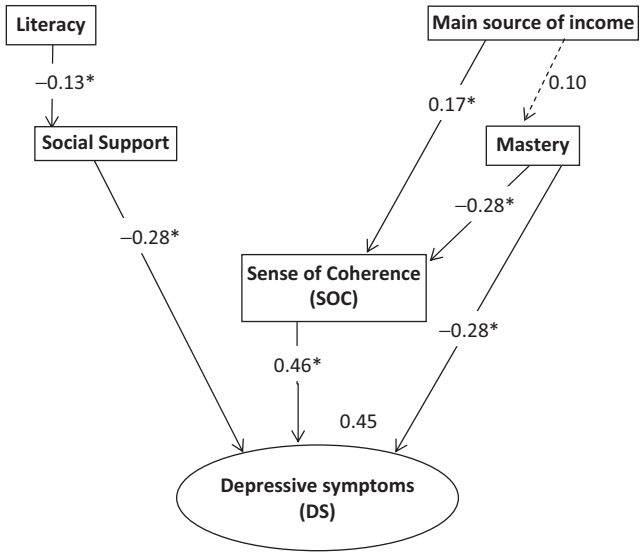

Figure 1. Associations between sense of coherence (SOC) and depressive symptoms (DS): results of path analysis for high-SOC group. Significant paths ($p \leq 0.05$) are marked with*. Insignificant paths are marked with dashed arrows.

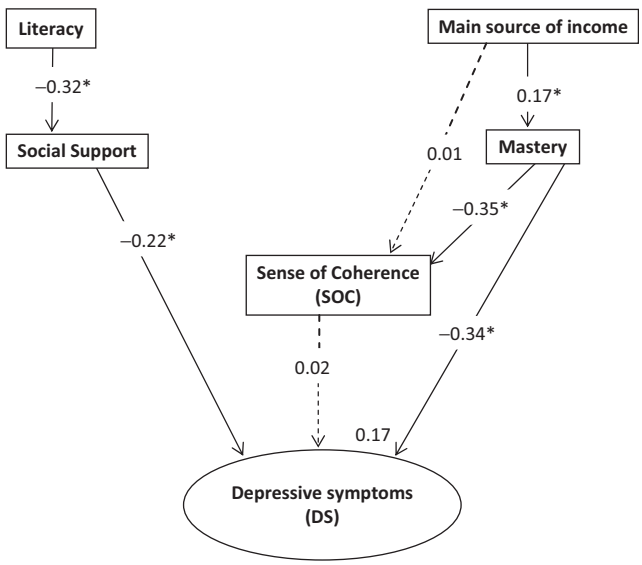

Figure 2. Associations between sense of coherence (SOC) and depressive symptoms (DS): results of path analysis for low-SOC group. Significant paths ($p \leq 0.05$) are marked with*. Insignificant paths are marked with dashed arrows.

The indirect effects of the resource of income on DS for the high-SOC group were −0.06, and 0.12 for the low-SOC group (not shown in Figures 1 and 2).

Discussion

Few studies have examined the associations between SOC and depression in non-Western populations. The aim of this study was to examine whether different levels of SOC relate to DS among poor, minority indigenous Arab Bedouin women in Israel and to explore possible pathways to this association. We found, first, that SOC was relatively low (mean = 3.41, SD = 1.15) compared with previous findings in Israel, which showed the mean (SD) of SOC to be 4.54 (0.82) among Jews, 4.10 (0.90) among Muslims and 4.42 (0.88) among Druze (Braun-Lewensohn & Sagy, 2011).

Second, when we divided SOC into high and low, we found that high SOC was positively and significantly associated with higher levels of DS, while low SOC was not associated with DS. While this finding contradicts previous results showing that SOC has a protective effect from depression (Amirkhan & Greaves, 2003; Luutonen et al., 2011), it confirms a review that found that SOC and mental health interactions differ in specific socio-cultural contexts (Eriksson et al., 2012).

Our results demonstrate the importance of measuring levels of SOC within one population, in order to explore different interactions between SOC and health outcomes. Furthermore, our finding that high SOC among Bedouin women was associated to higher DS is an interesting and new result. We assume that Bedouin women with higher SOC might have higher DS for two main reasons. First, according to Antonovsky (1987), higher SOC means higher life orientation and better understanding of life circumstances. It might be that coherent life orientation or, in other words, understanding among these women of the life circumstances might contribute to higher DS. In other words, Bedouin women with higher SOC better understand their lower status in both Bedouin and Israeli society. Bedouin women suffer from double marginalization as a minority within a minority (Abu-Rabia-Queder, 2008) – that is, as Arab Bedouins within Israeli society and as women within the patriarchal Bedouin Arab society. Even those with higher education are not protected from the adverse effects of social marginalization on their mental health (Daoud et al., 2013). The second reason that high SOC might be associated with high DS among these women is that we assume their changing status, *via* education (Abu-Rabia-Queder, 2008), may have increased Bedouin women's critical thinking toward their lower status in society. Increased critical thinking might result in higher conflict and stress, which are predictive of depression. The fact that we found negative correlations between psychological resources (mastery and social support) and both, SOC and DS support this argument. These results differ from those of previous studies, which found that high SOC is associated with higher social support among Western women (Krantz & Östergren, 2004; Nilsson et al., 2000). While women's understanding of their reality might equate to the SOC construct of comprehensibility, future research might examine how the other constructs of SOC (meaningfulness and manageability) can relate to DS using the long-form SOC questionnaire.

Among the low-SOC group, SOC was not associated with DS. This is not consistent with previous studies. For example, the role of low SOC as a predictor of DS in a non-depressive population sample was examined in a longitudinal study, which found that low SOC continued to predict DS one and nine years after initial study (Luutonen et al., 2011). Another study examined cultural differences in vulnerability to depression and the predictive role of SOC for future health among Bedouin Arab and Jewish university students. The findings showed that Bedouin Arab students reported higher levels of depression as well as lower SOC scores (Abu-Kaf & Priel, 2012).

In our study, SEP did not play a significant role in explaining DS in the path analysis for both SOC groups. This could be explained by the fact that most women have low SEP. SOC has not always been associated with SEP in research. For example, a nation-wide study in Sweden showed that education was not associated with SOC, while occupation was associated (Larsson & Kallenberg, 1996).

One limitation of this study is its cross-sectional design; no causal inferences can be made from our results. Another limitation relates to the reliability and validity of the SOC scale to our study population. While we found high internal consistency for the 13-item SOC scale, we could not determine the construct validity of its specific constructs of comprehensibility, meaningfulness and manageability. Future studies might examine these SOC constructs.

Finally, our results raise questions about the universal basis of SOC and the pathways by which SOC impacts DS in the context of women in minority populations. While some studies suggest that depression could indicate a breakdown of SOC (Carstens & Spangenberg, 1997), others suggest that SOC and mental health are two independent but correlated constructs (Cohen & Savaya, 2003). We conclude that more research is needed into different levels of SOC within one population to examine its association with DS in specific cultural contexts, as SOC levels might interact differently with mental health outcomes for different subgroups. High SOC seems to be an independent construct associated with DS. However, it is not clear why low SOC is not associated with DS. Future studies into the pathways linking different levels of SOC to DS in minority groups in general, and among women in particular, would improve understanding of key factors in the mental health of those groups.

Declaration of interest

The authors report no conflicts of interest. The authors are solely responsible for the content and writing of the paper.

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