



# National Resilience: A New Self-Report Assessment Scale

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## Abstract

The current paper presents a new self-report national resilience assessment scale (NRAS). The scale was constructed and validated using a sample of 1022 Jewish Israeli adults. The internal structure of the 25-item was determined by a Varimax factor analysis, which emitted four distinct factors pertaining to identifying with the state, solidarity and social justice, trust in national institutions and trust in public justice; which explained 61% of the variance. These factor scores were validated against two national resilience promoting factors (community resilience and sense of coherence), and two national resilience suppressing factors (distress symptoms and sense of danger); as well as four demographic characteristics (level of religiosity, political attitudes, income and level of exposure to terror/ war experiences in the last year). Results supported the validity of the NRAS and its four components, showing that it was consistently correlated with resilience promoting and resilience suppressing factors.

**Keywords** National resilience scale · Community resilience · Sense of danger · Distress symptoms · Sense of coherence · Terror attacks

## Introduction

The original concept of resilience comes from the physics of materials and is defined as the maximum energy that can be absorbed within the elastic limit, without creating a permanent distortion (e.g., Roylance 2001). Social scientists have borrowed the concept and use it to describe people's ability to properly adapt to stress and adversity. A large number of definitions of people's resilience have been proposed by researchers (Fletcher and Sarkar 2013; Canetti-Nisim et al. 2009; Masten 2011). According to Egeland and associates,

resilience constitutes “the capacity for successful adaptation, positive functioning or competence... despite high-risk status, chronic distress, or following prolonged or severe trauma” (Egeland et al. 1993, p. 517). Norris et al. (2008) have defined resilience as a positive trajectory of adaptation after a disturbance, distress, or adversity. Overall, researchers seem to agree on two main issues: First, the concept of resilience has often been used in discussing people's ability to withstand stress and adversity (Ajdukovic et al. 2015; Bonanno 2004; Luthar et al. 2000; Suedfeld 2015). Second, resilience is a complex multifaceted concept whose measurement arouses a rich debate (e.g., Bonanno et al. 2015).

Resilience studies have mainly focused on individual resilience. For example, the term “national resilience” yields (August 18, 2015) 31 results using Scopus search engines (search categories: title, article, abstract and keywords), compared with 99 results using the term “individual resilience”. Various tools developed to predict individual resilience (e.g., King et al. 2006). However, Bonanno et al. (2015) indicate that interest in the human capacity for resilience in the face of aversive life events has grown exponentially in the last decades. The current study focuses on the development of a new scale for measuring national resilience.

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Several studies have referred to resilience as a societal phenomenon, and investigated it in terms of national or social resilience (Barnett 2004; Chemtob 2005). The concept of national resilience (NR) is a broad one, addressing the issue of the society's sustainability and strength in several diverse realms (Amit and Fliescher 2005). Friedland (2005) has argued that national resilience is probably the most elusive concept of resilience since it 'should express two issues: First, society's ability to withstand adversity with its values and institutions remaining intact. Second, it display society's ability to cope with a changing, sometimes hostile, environment by changing and readjusting in new and innovative way' (p. 8). Ben-Dor et al. (2002) attributed four main social components to this mode of resilience: patriotism, optimism, social integration and trust in political and public institutions. They reasoned that in a time of intractable conflict, members of a resilient society would display durable stability in maintaining these components.

A comparison of students' perceptions of national resilience (NR) in the USA and Israel (Canetti et al. 2014) similarly concluded that NR should be defined as the nation's ability to cope successfully with its adversities (such as poverty, terrorism, or corruption) while keeping its social fabric intact. This study shows that themes which are similar to those delineated by Ben-Dor et al. (2002) underlie the perceptions of NR of citizens of the USA as well as Israel. Additional Israeli studies (Gal 2014) claim that these components of NR helped the Israeli society to cope with the Al Aqsa intifada (uprising) which took place between 2000 and 2005. However, these studies do not specify antecedents of higher NR, nor their impact on different components of NR.

Bonanno et al. (2007) have claimed that it is essential to differentiate between predictors and indicators of resilience: *Resilience indicators* are measures taken after the occurrence of potentially traumatic event (PTE, Bonanno 2005). Bonanno et al. (2015) recommended the use of longitudinal design in order to identify different trajectories of resilience. Resilience indicators (some researchers used the term resilience outcome) include variables pertaining to people's returning to their everyday lives, as well as demonstrating similar levels of stress symptoms before and after the PTE. Resilience indicators should include variables pertaining to prominent aspects of life: family life, job or school, leisure time, social life, health, mood and level of stress symptoms. These indicators can be based on self-report measures as well as on "objective" measures such as post adversity level of economic activity or level of cultural and leisure activity, compared with pre PTE level. *Predictors of resilience* are measures of resilience taken before the harsh event took place in order to predict people's ability to withstand PTE in the future, or to create baseline data. For example, research has indicated that sense of coherence and sense of danger are good predictors for individual resilience (Eshel and Kimhi

2016a) while trust in community or national leadership are good predictors of community and national resilience (Kimhi et al. 2013). The current study describes a national resilience assessment scale (NRAS) which can be used as a predictor as well as an indicator of national resilience.

### Promoting and Suppressing Factors of National Resilience

The validity of the NRAS was determined by its association with two national resilience promoting factors (community resilience and sense of coherence), and two national resilience suppressing factors (distress symptoms and sense of danger); as well as four demographic characteristics which have been found as predictors of resilience: level of religiosity, political attitudes, income and level of exposure to terror/war experiences in the last year.

### Community Resilience (CR)

CR has often been conceptualized in terms of population wellness (Norris et al. 2008), collective efficacy (Sampson et al. 1997), social cohesion (Vinson 2004), or community readiness for future threats (Kaniasty and Norris 2000). Although no agreement has been achieved so far concerning the definition of CR (Norris and Stevens 2007), there is substantiated consensus among researchers that CR constitutes a major community asset which facilitates coping with traumatic experiences and major disasters (Braun-Lewensohn and Sagy 2014; Kimhi and Shamai 2004; Parham 2011). Communities characterized by higher CR more successfully overcome stressful ordeals, and are characterized by better recovery ability, compared to communities with lower resilience (Buikstra et al. 2010). Recent studies conducted in Israel have indicated significant positive correlations between community and national resilience (Kimhi et al. 2013; Kimhi and Eshel 2009). Based on the above, we hypothesize that community resilience will significantly predict national resilience.

### Sense of Danger

Low sense of danger and lower worries about potential future threats enhance post-adversity sense of resilience (Scott et al. 2012). A low sense of danger was negatively correlated with locus of control of soldiers (Solomon et al. 1989). It was positively correlated with posttraumatic recovery and life satisfaction, and negatively linked to level of distress symptoms of adolescents (Kimhi et al. 2010). In line with these data we hypothesize that minimized expectation for future adversities, that is, a low sense of danger, will constitute an important determinant of national resilience.

Accordingly, we hypothesize that sense of danger will significantly and negatively predict national resilience.

### Distress Symptoms

War and terror attacks shake people's basic sense of security and give rise to distress symptoms. These symptoms may take the form of delayed emotional and behavioral problems (Dyregrov et al. 2002), depression, anxiety and grief (Hadi et al. 2006), or posttraumatic stress disorders (PTSD). Most people experience some level of distress symptoms which are caused by lesser stressors (Derogatis and Savitz 2000). Furthermore, daily hassles may be more harmful for one's health than major stressful events (DeLongis et al. 1988). An earlier study has found a significant negative correlation between level of individual distress symptoms and public resilience, composed of community and national resilience (Kimhi and Eshel 2009; Kimhi et al. 2012). We hypothesize that distress symptoms will significantly and negatively predict national resilience.

### Sense of Coherence (SOC)

SOC is a major resilience fostering resource in Antonovsky (1993) salutogenic model, which explores the origins of individual health following stressful events. A high SOC has been found to be positively associated with perceived health and well-being (Ebert et al. 2002). It was negatively correlated with diseases and physical symptoms (Pallant and Lae 2002), and depression (Amirkhan and Greaves 2003). A recent study reported that SOC correlated significantly and positively with national resilience (Kimhi and Eshel 2009; Kimhi et al. 2012). Along that line, we hypothesize that sense of coherence will significantly predict national resilience.

### Demographic Characteristics Promoting National Resilience

Earlier studies have indicated that several demographic characteristics constitute predictors of national resilience: level of religiosity, political attitudes, income and level of exposure to adversity.

#### Level of Religiosity

Only a few studies have examined links between religiosity and resilience. A positive association between level of religiosity and resilience has been found by Sousa et al. (2013), and a negative correlation between religiosity and level of PTSD symptoms after an earthquake was reported by Burnett and Helm (2013). Eshel and Kimhi (2016) studied 510 Jewish Israeli civilians 4 months after the 2014 Israel-Gaza

war. This study, which pertained to components of NR, has found that religiosity significantly predicted confidence in the Prime Minister and the government, as well as patriotism, but did not predict trust in national institutions. We assume that a higher level of religiosity will positively predict NR.

#### Political Attitudes

Political attitudes are likely to be associated with assessment of government functioning in a democratic state. Political attitudes in Israel refer mainly to issues of willingness to cede or give up occupied territories in the West Bank in order to reach a long-term peace agreement with Palestinians. Right-wing attitudes correspond to lower willingness to cede these territories (Canetti-Nisim et al. 2009; Halperin et al. 2009). We predict, accordingly, that left-wing people will regard the present right-wing Israeli government and the actions of the security forces more negatively, whereas their attitude toward national institutions will be more positive compared to the attitudes of right-wing individuals.

#### Income

We are not aware of studies which employed income as a predictor of NR. However, an earlier study (Kimhi and Eshel 2016) indicated that a higher level of family income significantly predicted a higher level of individual resilience (see also, Eshel et al. 2016). Research has shown that a lower postwar economic level is linked with vulnerability to stress (Eytan et al. 2004; Galea et al. 2004), and has a negative impact on postwar adjustment of war victims (Nordanger 2007). Extrapolating from these studies, we hypothesize that economic level will positively predict NR.

#### Level of Exposure

Exposure to war and terror attacks was found to have a detrimental effect on individual resilience (Kimhi and Shamai 2004). A higher level of exposure was associated with a higher level of distress symptoms (e.g., Heath et al. 2012; Shamai and Kimhi 2007). Eshel and Kimhi (2016) reported that a higher level of exposure to terror/war experience significantly and negatively predicted confidence in the Prime Minister and government, patriotism and confidence in national institutions. Based on these studies we hypothesize that exposure of civilians to war adversities will negatively predict NR.

### Hypotheses

1. The NRAS will include the following five main components: confidence in the country leaders; patriotism,

ability to cope with future crisis, social solidarity and trust in national institutions.

2. NRSA will show good construct validity: significant positive correlations with resilience promoting factors (community resilience and SOC) as well as significant negative correlations with resilience suppressing factors (sense of danger, distress symptoms, level of exposure).
3. NRSA will be correlated with demographic characteristics: Higher level of religiosity, more right wing political attitudes, higher income and higher exposure to terror/war experience will predict higher level of NR.

## Method

### Data Collection

A sample of 1022 Jewish Israeli adults was employed to examine the characteristics of the NRAS. Recruiting of participants to this study was conducted by an Israeli online survey research organization, which employs a panel of over 100,000 subjects, representing every geographic and demographic sector of Israel (<http://www.ipanel.co.il/>). For the

validity of internet questionnaires see: Gosling et al. 2004). Data collection was carried out using an online panel. The internet organization uses the stratified sampling method, based on data published by the Israeli Central Bureau of Statistics, and determines quotas by age and gender. Each participant who responded to the questionnaire signed an informed consent form. The questionnaire was approved by the Ethics Committee of Tel Hai College. The sample consisted of 1022 adult Jewish civilians.

Table 1 presenting their demographic characteristics indicates that the participants were on the average over 40 years old, with high school matriculation (12 years of education) or higher, average income, with a similar proportion of males and females. Most participants reported low levels of exposure to terror/war experience during the last year.

### Development of the National Resilience Assessment Scale (NRAS)

Items of the national resilience scale were derived from a number of studies: (a) The Center for National Security at Haifa University (Ben-Dor et al. 2002). (b) A study on individual and public resilience in the town of Kiryat Shemona

**Table 1** Demographic characteristics of the investigated sample

Variable	Scale/range	Frequencies	Mean/ %	SD
Age	18–45	589		
	46–65	305	43.56	16.09
	66–91	128		
Education	1–2 = elementary, high	121		
	3–4 = non academic	402	4.22	1.25
	5–6 = university	478		
Gender	0 = female	493	48	
	1 = male	529	52	
Average family income	1 = much less	211		
	2 = less	308	2.51	1.09
	3 = average	308		
	4 = above	358		
	5 = much above	37		
Political preference	1 = much right	118		
	2 = right	424	2.42	0.88
	3 = center	352		
	4 = left	117		
	5 = much left	11		
Religiosity	1 = secular	447		
	2 = traditional	383	1.83	0.92
	3 = religious	110		
	4 = orthodox	82		
Exposure to terror/war experience	5–10 = low	895		
	11–15 = medium low	106	7.11	2.87
	16–20 = medium high	19		
	21–25 = high	2		

one year after the Second Lebanon War (Kimhi and Eshel 2009). (c) Studies of Israeli identity and patriotism (Auron 1993; Lazar et al. 2004). (d) A study of demographic variables as antecedents of Israeli and national resilience (Kimhi and Eshel 2016). In addition, we have added five items dealing with social justice to the current study. After collapsing overlapping items the scale includes 25 items. The 6-point response scale ranged from 1= (very strongly disagree) to 6= (very strongly agree).

## Additional Instruments

### Community Resilience

A short version of the Conjoint Community Resiliency Assessment Measure (CCRAM) (Leykin et al. 2003) was employed. This version included 10 items pertaining to identification with one's community ("I am proud to tell people where I live"), trust in municipal authorities ("I trust the decision makers in my community"), and confidence in the community's ability to withstand adversities ("People in my community know what they are supposed to do in case of emergency"). The 5-point response scale ranged from 1 = does not agree at all, to 5 = totally agrees. The current scale's reliability was  $\alpha=0.92$ . Earlier studies indicated that the scale has high reliability and construct validity (Eshel and Kimhi 2016).

### Sense of Danger

The sense of danger scale (Solomon and Prager 1992) pertaining to post-war perceived personal, familial and national danger was employed (e.g., "To what extent are you afraid that your country will encounter future acts of terror"). This six-item instrument was rated by a Likert-like scale ranging from 1 (not at all) to 5 (very much). These authors have found that this scale distinguished Holocaust survivors under stress from individuals without Holocaust background. The current scale's reliability was  $\alpha=0.85$ .

### Distress Symptoms

The Brief Symptom Inventory (BSI, Derogatis and Savitz 2000), relating to anxiety, depression, and somatization symptoms was used. This 18-item inventory is scored on a Likert scale ranging from "not suffering at all" (1) to "suffering to very much" (5). The scale's current reliability was  $\alpha=0.92$ .

### Sense of Coherence (SOC)

SOC was measured by a scale devised by Antonovsky (1993). Responses to this 13-item instrument were rated on a 7-point

scale. For example, answers to the item "Doing the things you do every day is" ranged from (1) "a source of pain and boredom" to (7) "a source of deep pleasure and satisfaction". Validity and reliability data for this scale are presented in Antonovsky (1993). The scale's current reliability was  $\alpha=0.86$ .

## Demographic Characteristics

### Level of Religiosity

Level of religiosity was measured by one item. Please indicate your level of religiosity: 1 = secular, 2 = traditional, 3 = religious, 4 = very religious or ultra-orthodox (e.g., Kimhi and Eshel 2016).

### Political Attitudes

Political attitude in Israel pertains mainly to security issues and the Israeli Palestinians conflict and was measured by the following item: "Please indicate your political attitudes (regarding foreign affairs and security)". Scale range was 1 = extreme right, 2 = right, 3 = center, 4 = left, 5 = extreme left.

### Average Family Income

Income was measured by one item: family income compared to average family income in Israel (12,345 NIS): 0 = no income at all, 1 = much lower than average, 2 = below average, 3 = average, 4 = above average, 5 = much higher than average. Studies done in Israel have indicated that this item is a valid measure for income (e.g., Kimhi and Kasher 2015) and does not result in refusal to answer a direct question on this private issue.

### Exposure

Exposure to terror/war adversities (during last year) was examined by a questionnaire based on an instrument devised by Heath et al. (2012) which pertains to being hurt by acts of terror or war in the last year. The five items were: "Have you personally been physically hurt?", "Has any member of your close family been physically hurt?", "Were any of your friends or acquaintances physically hurt?", "Have you felt that your life was in danger?" The 5-point response scale ranged from 1 = Not at all, to 5 = Very much. The sum of these five items determined exposure score.

## Results

First, we launched a factor analysis (Varimax rotation) on a national resilience 25 items scale (see Table 2). Scree Plot clearly indicated a four factor structure and we have used

factor analysis limited to four factors. After excluding one item (trust in the police), due to a factor load greater than 0.40 on two factors, we were left with 24 items and four factors. In fact, three expected NRAS component collapsed into factor 1: confidence in the Prime Minister and the government, patriotism and Israeli society coping with crisis.

We calculated an average score for the overall scale as well as for each of the four factors. The overall average score constitutes a normal distribution with some light tendency to the right (higher levels of national resilience):  $M = 3.94$ ,  $SD = 0.73$ . According to item content, we named the four factors as follows: “identifying with the State of Israel” (12

**Table 2** Factor analysis of national resiliency assessment scale (NRAS) (Varimax rotation,  $N = 1022$ )

Factors, items and theoretical contents (scale 1 = completely do not agree to 6 = completely agree)	<i>M</i>	<i>SD</i>	Factor loading			
			Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: identifying with my state	4.62	0.91	25% of variance			
Confidence in Prime Minister and the government						
1. The Prime Minister and the government show high leadership ability during this time of uncertainty	3.34	1.52	<b>0.478</b>	0.273	0.294	-0.365
2. I believe that my government will make the right decision during a time of crisis	3.92	1.42	<b>0.624</b>	0.203	0.258	-0.221
3. During a national crisis society in my country will back up government decisions and those of the prime minister	3.93	1.43	<b>0.536</b>	0.252	0.056	0.068
Patriotism						
4. I have full confidence in the fighting ability of my country's army	5.05	1.16	<b>0.776</b>	0.098	0.096	0.065
5. I have full confidence in the ability of the security forces of my country to protect our population	4.93	1.21	<b>0.783</b>	0.047	0.092	0.225
6. I love my country and I am proud of it	5.33	1.06	<b>0.776</b>	0.098	0.096	0.065
7. My country is my home and I don't intend to leave it	5.34	1.19	<b>0.652</b>	0.119	0.157	-0.035
8. I believe that in my country there is a good future for me and my children	4.60	1.36	<b>0.638</b>	0.271	0.282	-0.185
Society's coping with crisis						
9. My society has coped well with past crises and will cope well with future crises	4.55	1.21	<b>0.740</b>	0.282	0.173	-0.065
10. Despite controversies in peace time, society in my country always unites during crisis time	4.94	1.12	<b>0.706</b>	0.261	-0.023	0.121
11. Although we had many wars in the past, society in my country has the ability to cope, if necessary, with another war	5.00	1.10	<b>0.787</b>	0.100	0.075	0.034
12. I am optimistic about the future of my country	4.49	1.35	<b>0.696</b>	0.285	0.234	-0.150
Factor 2: solidarity and social justice	3.28	0.99	14% of variance			
1. Social relations between the different groups in my country are good	2.99	1.25	0.272	<b>0.741</b>	0.174	0.044
2. In my society there is a high level of social solidarity (mutual assistance and concern for one another)	3.86	1.29	0.320	<b>0.692</b>	0.129	0.009
3. The expression 'man is wolf to man' is characteristic of my society	3.53	1.28	0.116	<b>0.719</b>	0.092	-0.006
4. Social tension within my society is low.	2.82	1.23	0.168	<b>0.797</b>	0.179	0.049
5. In my society there is a reasonable level of social justice	3.19	1.24	0.181	<b>0.691</b>	0.301	-0.046
Factor 3: trust in national institutions (1 = do not agree at all to 6 = completely agree)	3.34	0.94	14% of variance			
1. The welfare system	3.24	1.19	0.044	0.163	<b>0.645</b>	0.230
2. The Parliament (Knesset)	3.12	1.25	0.224	0.219	<b>0.660</b>	0.157
3. The education system	3.62	1.20	0.246	0.126	<b>0.741</b>	0.169
4. The health system	3.80	1.18		0.095	<b>0.775</b>	0.014
5. The social security system	2.92	1.27	0.067	0.215	<b>0.790</b>	-0.045
Factor 4: trust in public justice	3.34	1.22	7% of variance			
1. The media	3.03	1.18	0.011	0.064	0.137	<b>0.817</b>
2. The judicial system	3.65	1.43	0.162	-0.002	0.335	<b>0.761</b>
Overall national resilience score	3.94	0.73	61% of variance			

Bold numbers indicate the main factor loading to the identified factor

In the original questionnaire instead of “my country” it was written “Israel”

items), “solidarity and social justice” (five items), “trust in national institutions” (five items) and “trust in public justice” (two items). The four factors explained 61% of the variance. Table 2 shows item loadings, averages and standard deviations as well as percentages of explained variance for general national resilience score and for each factor. The current scale’s reliability for overall NRAS was  $\alpha = 0.92$ . These results mainly support our first hypothesis.

A correlation matrix of all the investigated variables (Table 3) indicates the following: medium sized significant positive correlations were found between the four NRAS factors. Community resilience and SOC correlated significantly and positively with national resilience overall score as well as with each of the four factors. The two resilience promoting factors (community resilience and sense of coherence) correlated significantly and positively with the NRAS as well as with each of the four factors. The two resilience suppressing factors (sense of danger and distress symptoms) correlated significantly and negatively with the NRAS as well as with each of the four factors.

In addition, linear Hierarchical Regressions examined the contribution of the promoting and suppressing factors to the explained variance of NRAS (Table 4). Table 4 indicates, as expected, that community resilience and sense of coherence positively and significantly predict NR, while sense of danger negatively predicts NR. The level of individual distress symptoms significantly correlated with NR; however, it did not add significantly to its explained variance beyond the effects of the other predictors. These results support our second hypothesis regarding the construct validity of NRAS.

Linear Hierarchical Regressions examined the contribution the demographic characteristics (level of religiosity, political attitudes, average family income and level of exposure) to the explained variance of NRAS (Table 4). In accord with our expectations, religiosity and income positively and

**Table 4** Two Hierarchical regressions on national resilience: psychological and demographic characteristics

Psychological characteristics	<i>b</i>	<i>SE</i>	$\beta$
Community resi	0.367	0.026	0.405***
Sense of danger	-0.112	0.029	-0.114***
Distress symptoms	0.000	0.048	0.000
SOC	0.104	0.025	0.143***
<i>R</i> <sup>2</sup>	0.256		
F change	87.66***		
Demographic characteristics			
Religiosity	0.050	0.027	0.109***
Political attitudes	-0.183	0.028	-0.219***
Income	0.060	0.021	0.090**
Level of exposure	-0.022	0.008	-0.085*
<i>R</i> <sup>2</sup>	0.071		
F change	19.33***		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

significantly predicted NRAS, as did right-wing political attitudes and lower exposure to terror experience. Overall, these results support our third hypotheses.

In order to better understand the mutual impact of the investigated predictors on NRAS, we launched a linear regression of all eight research variables on overall NRAS score (Table 5). Table 5 indicates the following: First, the eight predictors examined in our study explain 31% of variance of NR. Two of the psychological characteristics, community resilience and SOC, significantly and positively predict NR, whereas sense of danger negatively affects NR. Second, when psychological and demographic characteristics are examined together as predictors, only one demographic factor has an additional contribution to the explained variance of NR, beyond the effects of the

**Table 3** Pearson correlation among national resilience factors, psychological and demographic characteristics (*N* = 1022)

Variable	1	2	3	4	5
1. National res. All <sup>a</sup>	–	0.889***	0.742***	0.716***	0.374***
2. Factor 1		–	0.537***	0.422***	0.138***
3. Factor 2			–	0.461***	0.111***
4. Factor 3				–	0.359***
5 Factor 4					–
6. Community res	0.466***	0.361***	0.398***	0.398***	0.169***
7. Sense of danger	-0.229***	-0.178***	-0.161***	0.203***	-0.128
8. Distress symptoms	-0.221***	-0.213***	-0.094**	-0.161***	-0.065*
9. SOC	0.293	0.267***	0.141***	0.212***	0.192***
10. Religiosity	0.139***	0.213***	0.189***	0.080*	-0.388***
11. Political attitude’s	-0.231***	-0.312***	-0.280***	-0.116***	0.392***
12. Income	0.065*	0.012	0.002	0.116***	0.158***
13. Exposure	-0.064*	-0.087*	0.046	-0.030	-0.095**

<sup>a</sup>National resilience overall score, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Table 5** Hierarchical regressions of research variables on national resilience

Variables	<i>b</i>	<i>SE</i>	$\beta$
Community resilience	0.344	0.025	0.380***
Sense of danger	−0.137	0.030	−0.138***
Distress symptoms	0.036	0.047	0.026
SOC	0.124	0.024	0.170***
Religiosity	−0.001	0.024	−0.001
Political attitudes	−0.191	0.024	−0.229***
Income	0.024	0.018	0.036
Level of exposure	0.002	0.007	0.007
$R^2$	0.308		
F change	56.26***		

\*\*\* $p < 0.001$

psychological factors. Political attitudes significantly predicted NR: the higher level of right-wing attitude, the higher NRAS reported.

Additionally, we examined possible associations between demographic characteristics which were not part of our hypotheses (age, gender, education and family income) and national resilience. Results indicated the following: These demographic variables *did not* correlate significantly with overall national resilience scale score. However, there were a few significant correlations between these characteristics and the resilience factors: (a) males reported higher identification with the state of Israel (factor 1) compared with females ( $t = -2.53$ ,  $p = 0.011$ ). (b) males reported higher trust in national institutions (factor 3) compared with females ( $t = -2.95$ ,  $p = 0.003$ ). (c) the younger age group (18–45) reported a lower level of identification with the state of Israel (factor 1) compared with the two older age groups ( $F = 10.32$ ,  $p = 0.000$ ). (d) the lowest income group reported the lower trust in national institutions while the higher economic group reported higher trust in national institutions (factor 1) compared with the other family income groups ( $F = 5.47$ ,  $p = 0.000$ ).

## Discussion

This study describes the development of a new self-report scale for determining national resilience, in Israel as well as other countries (require minor changes), which can be employed in peacetime as well as following a major national adversity. The NRAS is based on earlier versions of tools employed in studies of national resilience in Israel (Ben-Dor et al. 2002; Eshel and Kimhi 2016; Kimhi et al. 2013). In line with the contention that NR is a multi-faceted concept, the current study indicates that it is composed of at least three factors. The first factor, identifying with the State of

Israel, accounts for three issues: confidence in the Prime Minister and the government, patriotism, and societal coping with crisis. The second factor refers to solidarity and social justice, and the third assesses confidence in national institutions. Due to the lack of NR assessment tools that are empirically grounded and pertain to the determinants which compose this concept, it was difficult to find a parallel for direct comparison.

Studies of community resilience emphasize the major role of leadership in determining this resilience (Baker and Refsgaard 2007). Leykin et al. (2003) have thus found that leadership accounted for 39% of the variance of the community resilience (CCRAM) scale. Our data show that this is also true for NR. However, Israelis have been living with wars and acts of terror for over six decades. These continuous experiences make two additional factors essential determinants of NR, namely, patriotism and a belief in the ability of Israeli society to withstand these adversities. The second NR factor, social solidarity is also a common determinant of community resilience which was termed social cohesion (Forrest and Kearns 2001), social support (Kaniasty and Norris 2008), or sense of trust (Stewart et al. 2009), all of which have significant associations with community resilience. The third factor, trust in public institutions, pertains to the belief that the preparedness of public and political institutions can be relied upon in times of national adversities. Enhanced social trust has been associated with different elements of community resilience (Cacioppo et al. 2011).

Our results show that the NRAS is an instrument which is characterized by high reliability, and high validity, is positively associated with resilience promoting psychological factors, and negatively linked to resilience suppressing variables. Furthermore, NR scores were also consistently correlated with demographic variables which have been found as correlates of individual and community resiliencies.

## Limitations of Study

Several major limitations of this study should be mentioned. First, the absence of other validated NR scales does not allow a comparison of the present scale with different conceptions and indices of NR, which is essential for the development of any psychological construct. Additional studies in this field are required in order to view the present NRAS in light of other potential conceptualizations of NR. Second, the characteristics of the NRAS were presently investigated in the context of Israeli society. Previous research (Canetti et al. 2014) has shown similarities between the meaning of NR among Israelis and citizens of the USA. However, additional research should determine whether the determinants of perceived NR which characterize citizens of Israel, will also portray NR components in other societies. Third, the NRAS is based on overall averages. Although this method

is both common and economic, it may hide the variability of different sections of the national public. Additional studies should investigate differences and similarities of NR assessments of different ethnic, socioeconomic, political, or age groups (Bonanno et al. 2015). These differences in public opinion may be essential for a better understanding of different social sections, and for enhancing social cohesion and solidarity in times of national stress. Fourth, the NRAS is based on a self-report scale. Future research may benefit from adding more objective measures of NR for further validating this scale.

## Conclusions

The NRAS has been shown to be a valid and a practical tool for the assessment of national resilience. Both internal and external validity have been demonstrated. The NRAS positively associated with resilience promoting psychological factors, and negatively linked to resilience suppressing variables. NR scores were also consistently correlated with demographic variables which have been found as correlates of individual and community resiliencies. Furthermore, this scale accounts for some of the complexity of the construct of national resilience, and claims that NR is composed of at least three major determinants, identifying with one's homeland, solidarity and social justice, and trust in national and public institutions. It can serve as an instrument for national leaders, as well as the academic community for improving national resilience in crisis situations.

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