Sense of coherence, hope and values among adolescents under missile attacks: a longitudinal study

Orna Braun-Lewensohn[a]; Shifra Sagy[a]

[a] Conflict Resolution & Conflict Management, Ben-Gurion University, Beer Sheva, Israel

Online publication date: 25 November 2010

PLEASE SCROLL DOWN FOR ARTICLE

Sense of coherence, hope and values among adolescents under missile attacks: a longitudinal study

Orna Braun-Lewensohn* and Shifra Sagy

Conflict Resolution & Conflict Management, Ben-Gurion University, Beer Sheva, Israel

This study aimed to explore measures of spirituality – sense of coherence (SOC), hope and values – among adolescents living in a violent political area and experiencing missile attacks. The three variables represent attributes of spirituality, such as searching for meaning and purpose in life, hope and feelings about the future, as well as values and beliefs. Adolescence seems to be an important developmental stage where many structures, such as SOC, hope and values, are formed and stabilised. We asked about the impact of living in an area of violence on this development. Data were gathered during two periods of time. The first sample was drawn in August 2006 in Sderot and other communities in the area which had suffered missile attacks since 2001. The second sample was drawn from the same area that had continued to suffer from missile attacks, during January 2009. Adolescents aged 12–18 filled out self-reported questionnaires. Results suggest that all variables were weakened during the prolonged violent events. It seems that the continuous chaos and stress of missile attacks had significant consequences in terms of spirituality for youngsters who had been growing up under these conditions. The difficulties were manifested by reports of weaker hopes and SOC, and by a decrease in attributing importance to collective values. These results are discussed in terms of experiencing the world as less comprehensible, less manageable and especially less meaningful.

Keywords: adolescents; spirituality; missile attacks

The term 'spirituality' and its conceptualisation differ across studies and through the years. In a review of 73 articles, Chiu et al. (2004) concluded that the term is a multi-dimensional concept which is comprised of several elements. They offered several themes which are incorporated in the term, including seeking meaning and purpose in life (e.g. Batten and Oltjenbruns 1999; Sherwood 2000; Taylor, Highfield, and Amenta 1999), as well as hope, search for hope and feelings about the future (e.g. Conco 1995; Sawatzky, Gadermann, and Pesut 2009; Sherwood 2000). Additional spiritual attributes were suggested by Sawatzky et al. (2009, 6) and included 'value and beliefs pertaining to perceived identity, purpose and meaning in life'.

The variables of the present study correspond to some attributes of spirituality and are examined in relation to quality of life and health of adolescents during times of political violence. Spirituality has been studied by scholars and health practitioners for many years and has been recognised as having a potential impact on individuals' ability to cope during stressful life events (Chiu et al. 2004).

---

*Corresponding author. Email: ornabl@bgu.ac.il

Our longitudinal study explored sense of coherence (SOC), level of hope and collective and individual values among adolescents who lived in Sderot and other communities located near the border with Gaza in the years 2006 and 2009. We compared the stability of these measures during two different points of time. The importance of studying these spirituality measures and resources during chronic political violence lies in the fact that they might be indicators of healthy development and adaptable coping with these potentially traumatic events (e.g. Antonovsky and Sagy 1986; Barenbaum, Ruchkin, and Schwab-Stone 2004; Sagy and Braun-Lewensohn 2009).

The salutogenic model and SOC

Approximately 30 years ago, Antonovsky (1979) suggested a new model and conceptualisation in stress research: 'salutogenesis', which means the 'origin of health'. This is a continuum model which suggests that, rather than classifying health/illness dichotomously, each individual at any given moment is somewhere on the ease/dis-ease continuum (Antonovsky 1987). According to this model, people have 'general resilience resources', which can help them conceptualise the world as organised and understandable. SOC represents the motivation, and the internal and external resources one can use to cope with stressors, and plays an important role in the way one perceives challenges through life. SOC is a global orientation, an enduring tendency to see the world as more or less comprehensible (the internal and the external world are perceived as rational, understandable, consistent and expected), manageable (the individual believes that s/he has available resources to deal with situations), and meaningful (the motivation to cope and the commitment to emotionally invest in the coping process) (Antonovsky 1987).

The salutogenic model suggests that an individual with a strong SOC is less likely than one with a weak SOC to perceive many stressful situations as threatening, and, thus, anxiety provoking. Given their tendency to perceive the world as meaningful and manageable, individuals with a strong SOC will be less likely to feel threatened by events of war and missile attacks and less vulnerable after these have occurred (Braun-Lewensohn, Sagy, and Roth 2010; Sagy 1998, 2002).

SOC can also be perceived as a spiritual world view in dealing with the source of stress, especially with regard to the meaningfulness component. By asking questions such as 'how can one create meaning in this situation' (Strang and Strang 2001) or by defining the ability to conceptualise stress as a challenge or as 'fighting spirit' (Moorey and Greer 1989), one can also define SOC as a spiritual source of coping with stress.

SOC during adolescence

SOC is a construct that develops differently according to environmental characteristics and life experiences (Sagy and Antonovsky 1999). The role of SOC in younger age groups fluctuates more. Adolescence is a crucial developmental stage in which youth develop advanced cognitive and emotional mastery, enabling them to take perspective, plan ahead and see future consequences of an action, and manage emotions more effectively, all of which facilitate their abilities to deal with sources of conflict and stressful events in a variety of contexts (Celestin-Westreich and Celestin 2005). Additionally, early adolescence is characterised by confusion, unpredictability and experimentation. Thus, from a developmental point of view, we expect stronger SOC in late adolescence. Several criteria during adolescence contribute to the

development of a strong construct of SOC. One of the most important is the stability of the community, since it helps adolescents to perceive the world around them as predictable and manageable (Antonovsky and Sagy 1986).

Moreover, since the development of SOC in adulthood is based on adolescent experiences (e.g. Lundberg 1997; Cederblad et al. 1994), adolescence seems to be a critical period. Facing ongoing stressful situations of political violence might impact adolescents' ability to develop a strong SOC. It seems important to investigate this development among adolescents facing chronic longitudinal missile attacks. An additional criterion that could enhance strong SOC is socio-economic status (SES). However, findings regarding this variable are contradictory. While some studies show SES to have an impact on SOC (Larsson and Kallenberg 1996; Poppius et al. 1999), others have found no relationship (Feldt et al. 2005; Hakanen, Feldt, and Leskinen 2007).

Hope

Sense of hope involves emotional elements of expectation as well as cognitive and deductive thinking to pursue new ideas and solutions (Lazarus 1991; Snyder 1994; Staats 1989). Hope is seen by some researchers as a 'spirit' of positive attitude to life and the ability to have an optimistic view of the future when facing stressful situations in life (Moorey and Greer 1989; Sawatzky et al. 2009; Strang and Strang 2001). Hope is based on high cognitive processing, requiring mental representations of positively valued abstract future situations and more specifically, it requires setting goals, planning how to achieve them, use of imagery, creativity, cognitive flexibility, mental exploration of novel situations and even risk taking (Breznitz 1986; Clore, Schwartz, and Conway 1994; Fromm 1968; Isen 1990; Lazarus 1991; Snyder 1994, 2000). The affective component of hope is considered a consequence of cognitive elements and may contain positive as well as negative features since individuals may realise that the achievement of their goal may involve struggles, costs, and endurance (Snyder 1994, 2000). The combination of cognition and affection allows for the development of adaptive reactions to stress (Freedy and Hobfoll 1994). According to this perception, individuals who maintain hope are those who will appraise the situation as challenging (Seginer 2008). Furthermore, research on hope has revealed that its presence indicates the existence of social support (Thoits 1994) and that it increases the individual's sense of control over life (American Psychological Association 1996). Thus, hope is a potential factor which enables individuals to cope well and to achieve well-being when facing stressful events like those which are politically violent (Landau 1998; Landau, Beit-Hallahmi, and Lavi 1998; Sami and Kraus 1985). One factor which was found to be meaningful in contributing to level of hope is level of education. The more highly educated people reported higher hopes and vice versa (Holdcraft and Williamson 1991).

In several studies, hope is structured by wishes and expectations and could have individualistic as well as collective components (Staats 1989). Moreover, hope is not only psychological in nature but can also be understood as a social-environmental variable as well as a cultural factor which may exert a significant impact (Sagy and Adwan 2006). It should be noted that hope is also connected to one's value system as it is a reflection of waiting for something meaningful and worthwhile to happen (Sagy and Adwan 2006).

According to theories of well-being and conflict resolution (e.g. Fisher 1997), hope is expected and has been found to increase at times of threat in order to fulfil basic human needs (Staats and Partlo 1993). However, this was not the case among

Jewish Israeli adolescents during the second Palestinian uprising. Rather, they showed a decrease in their collective wishes (Sagy and Adwan 2006). Additionally, a recent study, carried out during the war in Gaza, found Jewish Israeli adolescents to have higher individualistic hopes than collective ones (Braun-Lewensohn and Sagy 2010). These results are congruent with data about future orientation of adolescents (Seginer 2005) which indicated that youngsters all over the globe are focused mainly on their own private world.

Values

A value system is the result of social environment and might provide aspirations for social goals through which actions can be judged, justified and motivated (e.g. Feather 1995; Rohan 2000). Adolescence is a unique period in which values are being formed, re-evaluated and renegotiated. The formation of a value system also allows for identity development (Bogy et al. 2001; Gecas 2000; Hitlin 2003; Raviv et al. 1998).

Several researchers related to values on the individualism–collectivism continuum (e.g. Kagitcibasi 1997; Triandis et al. 1988). Examining values on this continuum revealed that individuals with lower social status, and/or a lower level of education, reported higher collectivist values while those with higher education reported more individualistic values (e.g. Phinney, Ong, and Madden 2000).

In the Israeli context, Sagy et al. (1999) identified three dimensions of values among adolescents: individual (e.g. personal friends, personal interests, money for self); in-group collectivist (e.g. country, nationality, faith, solidarity with the poor in one's country) and universal (e.g. international cooperation, democracy, solidarity with poor in the world, environmental protection). The researchers found the in-group collectivist values as more important to Israeli youths, compared to universal values, and the individual values as most important of all (Sagy, Orr, and Bar-On 1999).

Only a few studies have followed adolescents during prolonged stressful situations of politically violent events with regard to changes in their value system. One study examined collectivist–individualistic values in the context of politically violent events related to the terrorist attack in Beslan in 2004. The authors suggest a positive impact of collectivist values on depression symptoms (Moscardino et al. 2010). A different study, carried out on Finnish adolescents following the September 11th attacks, found that there was a change immediately after the attacks in group security values such as safety for the family, social order and national security. However, this increase swung back to the original values a few months after the attacks (Verkasalo, Goodwin, and Bezmenova 2006). The situation of the present study is quite different in terms of the proximity of the violent events to the youngsters and in the continuity of the stressful situation in contrast to one dramatic event.

Research background

The research took place in Sderot and communities around the Gaza border in two time periods during which missiles continued to fall in the area. The first missile fell in 2001, and after the disengagement from Gaza settlements in August 2005 the attacks worsened. During 2006 almost 1000 missiles hit the area and in 2008 more than 3000 missiles were fired. This chronic-stress situation persisted during these years with several strikes per week (Brown 2009).

Data were gathered during two periods. The first sample was drawn in August 2006, and the second during January 2009. The first questionnaires were administered during the Second Lebanon War when much of the attention centred on the attacks in the northern part of the country, although missiles continued to fall in the communities of the south. The second stage took place during Operation Cast Lead when the situation in the southern part of the country was more acute, in addition to the chronic, continuous attacks through the years.

The uniqueness of the situation is the long period of time in which adolescents in this region were exposed to real life-threatening events. The situation of rocket fire in the area allows only for 10–20 seconds to alert people to seek a safe area. It should be noted that through the years and even today, not all houses, schools and/or public places have an available safe area. Thus, the only thing they can do when the alert is sounded is to lie down and wait to hear the rocket explosion. These situations are totally unpredictable and at any moment during day or night, one can be alerted for rocket fire.

Aside from the actual rocket fire, for most of these years the government and the media ignored the situation, leaving the citizens of the area to deal with their plight independently, almost without any help. The way the situation was dealt with by officials led to anger and mistrust.

We asked whether there was a change in levels of spirituality, as expressed by SOC, hope and values, among the adolescents living in Sderot and the communities around Gaza during the long-lasting stressful period of political violence. We hypothesised that SOC would be damaged and weakened during this period as the years of political violence would influence life stability and, as a result, reduce levels of SOC.

Regarding hope, we hypothesised that wishes (which do not have to be realistic), but not expectations, would be increased during these years (Fisher 1997; Staats and Partlo 1993). The last variable of 'values' was also hypothesised to be reduced. As adolescence is a critical developmental period for the formation of values (e.g. Bogy et al. 2001), and since values are influenced by social environment and context (e.g. Hitlan and Piliavin 2004), continuous violent events could be reflected in changing values during the years.

Additionally, we examined the relationships between the three spiritual measures: SOC, hope and values. We hypothesised hope to be related to SOC (Hobfoll, Briggs-Phillips, and Stines 2003) as well as to the different values (Sagy and Adwan 2006). Since a strong value system can reflect coherence and meaningfulness, we also hypothesised links between SOC and the different values.

Our last question related to level of socio-economic status and the different spirituality measures. We hypothesised that higher socio-economic status would be an indicator of stronger SOC (Poppius et al. 1999), higher levels of hope (Mickley Soeken and Belcher 1992), stronger individualistic values and weaker collectivist values (Freeman 1997; Phinney, Ong, and Madden 2000).

Method

Participants

One hundred and fourteen teenagers living in southern Israel participated in the first phase in 2006 and 83 adolescents from the same region participated in the 2009 phase. No inclusion or exclusion criteria were used apart from age (12–18). The mean age of the 2006 sample was 15.46 (SD = 1.55) and of the 2009 sample was M = 14.91 (SD

= 1.48). Females accounted for 73% of the 2006 sample and for 48% of the 2009 sample.

Procedures

Data were collected by questionnaires administered during August 2006 and January 2009. Adolescent research assistants (living in the attacked area) were recruited and were supervised by the researchers to administer self-reported questionnaires to their peers in their homes. The assistants approached their peers and asked them to participate in the study. The involvement of the administrators of the questionnaires was minimal and included only explanations of words which participants did not understand.

All participants were informed that the researchers were interested in their experiences, and anonymity was emphasised. Participation was voluntary and permission from parents was received. For each scale, those who did not fully complete the questions which were part of the scale were removed from the analysis.

Measures

SOC (Antonovsky 1987) was measured using a series of semantic differential items on a seven-point Likert-type scale, with anchoring phrases at each end. High scores indicate a strong SOC. An account of the development of the SOC scale and its psychometric properties, showing it to be reliable and reasonably valid, appears in Antonovsky's writings (1987, 1993). In this study, the SOC was measured by the short-form scale consisting of 13 items, which was found to be highly correlated with the original long version (Antonovsky 1993). The scale includes such items as: 'Doing the things you do everyday is' – answers ranging from (1) 'a source of pain and boredom' to (7) 'a source of deep pleasure and satisfaction'. In the present study, the Cronbach's alpha was .75.

Hope Index (Staats 1989) is constructed as the interaction of wishes and expectations and includes items of hope referring to *self* and to *others* or to broad global concerns. Some items such as 'to be competent' and 'to be happy' reflect one's hope for oneself while other items reflect hope for global issues, such as 'peace in the world' and 'justice in the world'. Participants were asked to independently rate the extent to which they would wish for a particular future occurrence and the extent to which they would expect this to occur. Responses were rated on a scale of zero (*not at all*) to five (*very much*). The multiplication of the *wish* value by the *expect* value generated the measure of hope. The Cronbach's alpha of the hope index was .91: Hope self (individual) $\alpha = .85$; Hope others (collective) $\alpha = .87$.

Values (Angwik and von Borries 1997). The questionnaire was developed by 'Youth and History' researchers and includes 19 items. Respondents have to answer the question: 'How important are the following things to you?' Answers range from 1, very little, to 5, very much. Examples of items are: family, friends, country, nationality, peace, solidarity etc. Based on Sagy et al. (1999), items were grouped into three dimensions: collective in-group ($\alpha = .72$), individual ($\alpha = .66$) and universal ($\alpha = .78$). Table 1 presents the items in each dimension.

Socio-economic status was measured by parents' education. Participants indicated their mother's and father's education as either 'up to a high-school diploma' or 'professional or academic diploma' (above high-school diploma). Mother's and father's education were added to create a Likert scale of both parents' education.

Table 1. Items in each value dimension.

Collective in group values	Individualistic values	Universal values
My country	My family	International cooperation
My nationality	My friends	Democracy
My region	Hobbies/personal interests	Freedom of opinion
Religious faith	Money and wealth for me	Solidarity with the poor in the Third World
Solidarity with the poor in my country	My future career	Welfare and social security to everyone
		Environmental protection
		Peace and stability

Results

Table 2 presents means and standard deviations of the different variables. Additionally, *t* values are presented to explore differences between the years on each variable. Exploration of the data suggests that each of the broad dimension variables, namely, SOC, hope and the three value dimensions were reduced during the ongoing politically violent events. Further exploration revealed that the subcategory of 'individual hope' was reduced significantly while the 'collective hope' was reduced but not significantly. It should be mentioned that 'collective hope' was lower than the 'individual hope' in both years. Regarding values, 'individual' values were the highest in both years while 'universal' values were the lowest with 'in group collectivist' values in-between.

Table 2. Means, standard deviations and *t*-values of the study variables.

	2006 ($n = 114$)		2009 ($n = 83$)		
	Mean	SD	Mean	SD	*t*-value
Sense of coherence (1–7)	4.44	0.83	4.10	0.65	3.09**
Hope (0–25)	14.34	4.65	12.60	5.11	2.13*
Individual (0–25)	16.56	4.59	14.68	4.77	2.49*
Collective (0–25)	10.74	6.50	9.37	6.22	1.36
Wish (0–5)	4.50	0.52	4.08	0.80	4.14***
Individual (0–5)	4.51	0.52	4.15	0.81	3.38**
Collective (0–5)	4.46	0.73	3.98	0.99	3.60***
Expect (0–25)	3.13	0.86	2.92	0.92	1.46
Individual (0–25)	3.64	0.85	3.39	0.80	1.95
Collective (0–25)	2.34	1.30	2.26	1.27	0.39
Values (1–5)					
Collective in group values	3.70	0.63	3.14	0.81	2.58**
Individualistic values	4.41	0.40	4.01	0.71	4.50***
Universal values	3.38	0.56	3.05	0.57	3.83***

Notes: *$p < .05$, **$p < .01$, ***$p < .001$.

In order to check our assumption that our spiritual measures correlated, we examined the relationships between our study variables. Results are presented in Table 3.

Results suggest significant relationships between SOC and hope. Additionally, hope is significantly linked to both individual and in-group collective values and collective hope is linked to collective in-group values. No significant relationships were found between SOC and the different values.

Our last question related to socio-economic status. A two-way analysis of variance (ANOVA) was run in order to evaluate the simultaneous effects of time and socio-economic status and interaction of time × socio-economic status on each of the spirituality measures.

For SOC there was a significant main effect for socio-economic status ($F_{(2, 169)}$ = 3.57, p = .03) meaning that, in both years, socio-economic status had an effect on SOC with higher parents' education reflecting stronger SOC (2006: up to high-school diploma M = 4.02, SD = .88; one parent with high-school diploma, one with professional or academic diploma M = 4.49, SD = .77; both parents with professional or academic diplomas M = 4.52, SD = .83 – 2009: up to high-school diploma M = 3.95, SD = .59; one parent with high-school diploma one with professional or academic diploma M = 4.16, SD = .57; both parents with professional or academic diplomas M = 4.30, SD = .67). However, the effect size was quite small (η^2 = .04). Neither time nor interaction had any significant effect: time ($F_{(1, 169)}$ = 2.39, p = .12); time × socio-economic status ($F_{(2, 169)}$ = .25, p = .78).

For hope, none of the variables had significant effects: time ($F_{(1, 131)}$ = 1.98, p = .16); socio-economic status ($F_{(2, 131)}$ = .53, p = .59); time × socio-economic status ($F_{(2, 131)}$ = 1.03, p = .36).

Regarding individual values, since Levene's test for equality of variances indicated significant difference among the variances of the groups (p < .00), we set the significance level for differences between the groups to p < .01. For individual values, time had a significant effect ($F_{(1, 170)}$ = 25.39, p = .00), η^2 = .13, while socio-economic status had a marginally significant effect ($F_{(2, 170)}$ = 4.51, p = .012), η^2 = .05 (both parents up to high-school diploma: M = 3.92, SD = 4.37, one parent up to high-school diploma and one parent professional or academic degree M = 4.37, SD = .55, both parents professional or academic degrees M = 4.30, SD = .50); time × socio-economic status did not have significant effect ($F_{(2, 170)}$ = 3.81, p = .02).

Regarding collective in group values, there was main effect for time ($F_{(1, 162)}$ = 13.54, p = .00) with η^2 = .08 and for socio-economic status ($F_{(2, 162)}$ = 3.77, p = .02) with smaller effect: η^2 = .05. This indicates that the 2009 sample and those with

Table 3.   Correlation matrix of study's variables.

	1	2	3	4	5	6	7
1. Sense of coherence	1						
2. Hope	.20*	1					
3. Hope individual	.07	.41**	1				
4. Hope collective	−.03	.44**	.59**	1			
5. Individual values	.13	.23*	.14	−.06	1		
6. Collective in group values	.03	.38**	.07	.18*	.36**	1	
7. Universal values	−.08	.14	.04	.10	.36**	.49**	1

Notes: *p < .05, **p < .01, ***p < .001.

most-educated parents in both samples reported weaker collective in-group values (2006: up to high-school diploma $M = 4.00$, SD = .42; one parent with high-school diploma and one with professional or academic diploma $M = 3.84$, SD = .65; both parents with professional or academic diplomas $M = 3.60$, SD = .62 – 2009: up to high-school diploma $M = 3.37$, SD = .69; one parent with high-school diploma and one with professional or academic diploma $M = 3.55$, SD = .84; both parents with professional or academic diplomas $M = 3.16$, SD = .84). No significant effect was found for the interaction time × socio-economic status ($F_{(2, 162)} = .48$, $p = .61$).

For the last variable, universal values, there was only significant main effect for time ($F_{(1, 158)} = 13.58$, $p = .00$), with those from the 2006 sample reporting stronger universal values. Partial $\eta^2 = .08$. Socio-economic status ($F_{(2, 158)} = .44$, $p = .65$) and time × socio-economic status ($F_{(2, 158)} = .15$, $p = .86$) had no significant effect.

Discussion

This study aimed to explore measures of spirituality as expressed by SOC, hope and values during a continuous violent situation of missile attacks in southern Israel. These variables represent attributes of spirituality, searching for meaning and purpose in life, hope and feelings about the future as well as values and beliefs (Chiu et al. 2004; Sawatzky et al. 2009). The study took place after five and seven years of ongoing missile strikes which had caused deaths and injuries, in addition to causing destruction to private homes and private or public buildings. Investigating the levels of these three variables during this long period of political violence is important because of their relevance to healthy development in adolescence (e.g. Antonovsky and Sagy 1986; Barenbaum, Ruchkin, and Schwab-Stone 2004).

Our questions were comparative in nature. First, we compared the three spirituality measures over time and found that they were weakened during these years. Each of the variables – SOC, hope and values – was reported by the adolescents as less in the second stage of the study.

Looking specifically at the different variables, lower SOC was reported by adolescents in the second stage of the study as hypothesised. SOC is a developmental construct which becomes stable only around the age of 30 (Antonovsky 1987). Thus, during adolescence it is still being formed by the experiences of individuals. The literature suggests that, in order to develop a strong SOC, one must have organisation and structure in his/her life. Additionally, it is important to have consistency and emotional balance through life (Sagy and Antonovsky 1996). Being exposed to prolonged violent conflict and living in unstable and chaotic life conditions could weaken the individual's resources, the ability to make sense of the world, as well as to perceive it as manageable. As a result of these experiences, SOC could be meaningfully weakened.

Our second variable of 'hope' is different in its meaning. We hope for something meaningful even when the probability of its occurrence is low. First, our samples of adolescents presented a similar pattern of hopes as other samples in Israel (Sagy and Adwan 2006) and other Western countries (Seginer 2008), meaning that 'individual-centred' hope was stronger than 'collective' hope. These findings are congruent with Western thought which assumes that individuals have personal and social resources to meet their goals (Snyder 1994).

However, adolescents in our sample had higher wishes than expectations in both stages of the study. While the wishes decreased in the 2009 sample, expectations

remained the same. The decrease in wishes in 2009 emphasises the hopelessness among these youngsters. Even wishes for the future which do not have to be realistic have become difficult to fantasise. These results contradict our hypothesis, as well as theories of well-being and conflict resolution, which predict that during times of threat, wishes and hope will even increase (Fisher 1997; Staats and Partlo 1993).

The low expectations in both years seem to reflect the sense of reality among adolescents who grew up in an intractable violent conflict, and could represent their despair and hopelessness. It should be noted that in samples taken during the Oslo peace talks and during the first Intifada, Israeli Jews also reported lower expectations than wishes. During that time, expectations among Jewish youths were even lower than those of the Palestinians (Sagy and Adwan 2006).

Our third dimension of spirituality was values, which are considered meaningful components in the development and the formation of adolescent identity (e.g. Bogy et al. 2001). Moreover, they seem to be a protective factor especially in ecologically risky contexts (Knafo, Daniel, and Khoury-Kassabri 2008). In the present study, each of the value categories – 'individual', 'collective in group' and 'universalism' – decreased through the years. The fact that, during a prolonged period of time, officials ignored the problem and left the citizens of this area to deal with the situation by themselves without significant help from the government could lead to a decrease in values among adolescents in this area especially in the dimension of in group values. Furthermore, unlike the Finnish adolescents after September 11th whose security values increased immediately after the attack and swung back to their original level after six months (Verkasalo, Goodwin, and Bezmenova 2006), in our sample, living in an ongoing conflictual situation weakened values of adolescents in all dimensions.

The second hypothesis related to the relationships among the three spirituality measures. Hope seems to be connected to an SOC and to individual as well as collective in group values. When we conceptualise the world as stable, meaningful and coherent, we are also more hopeful. When we hope for something to happen, we consider it worthwhile. Indeed, our results support this notion and show that these measures are significantly linked.

The last question of the research related to the impact of socio-economic status on the different spirituality measures. We examined this question simultaneously with the effect of the different stages of the study. We found that indeed socio-economic status has some impact on the different measures. As we hypothesised, SOC was related and was affected by socio-economic status. It appears that those with better life experiences, as reflected by their parents' education, viewed their environment as less chaotic and more coherent and meaningful (Sagy and Antonovsky 1999). As for values, the more collectivist values, categorised as collective in-group values, followed the expected pattern. Adolescents with less-educated parents reported more collective in-group values while individualistic values were reported more by the in-between group of adolescents for whom one parent had a high-school diploma and the other had a professional or academic diploma. It seems that, in spite of the ongoing conflict and violence, those who grow up in a less-educated environment perceive their society as a cohesive group which continues to protect them (Hofstede 1991).

To conclude, all of our spiritual variables were weakened during the continuous stress of missile attacks. It seems that although most adolescents in this area were found as functioning properly on daily basis and did not exhibit major psychological difficulties (Sagy and Braun-Lewensohn 2009), their spiritual attributes were weakened during the years of violent events. These results could mean a less healthy

development and a weaker potential of adaptable coping resources. The chaotic and unstable situation led adolescents to feel hopelessness. When constantly experiencing the threat of missiles it is hard to perceive the world as comprehensible, manageable and mostly meaningful. Moreover, the longitudinal state of confusion and violence could also contribute to confusion in values, and social and moral concepts (Boothby and Knudsen 2000).

Although we did not investigate the same adolescents, our samples were drawn from the same area and belonged approximately to the same age group. Thus, it seems that chronic politically violent events and chronic stress have at least some link to the strength of the different spirituality measures. It should also be noted that during the long years of the continuous crisis many families who had the ability to move, left the area, leaving the weaker population to cope with the complex situation. This natural screening can also explain the drop in the measures of spirituality.

Study limitations

Beyond these suggestions, we have to consider the limitations of this study. The samples are neither representative nor random but rather consist of youngsters whom we were able to reach during such a difficult time. Thus, some degree of potential sample bias should be taken into account.

Apparently, the distribution according to socio-demographic criteria was not sufficient. For example, the first sample included a higher percentage of girls than boys. Moreover, our longitudinal research is not based on matched groups of identical participants. Therefore, our comparison and results should be viewed with reservation. As mentioned, part of the stronger population who had the ability, left the area.

In spite of these limitations, the importance of this study is in its being a field research carried out in the midst of the stressful situation of missile attacks. The unfortunate conflictual violent situation in the area serves as a 'natural laboratory' for investigation which is essential for studying human behaviour (Lazarus 1982).

In conclusion, during the long period of stressful and chaotic missile attacks, spirituality was reduced significantly. The spirituality attributes are significant factors and resources in contributing to healthy development of adolescents. Thus, the results of this study should alert policy makers, educators and health practitioners with regards to the well-being and development of adolescents who are continuously exposed to violent conflicts. Future research should focus on broad dimensions of the effects of ongoing political violence on these groups and they ways to support them. More specifically, research for example, should evaluate interventions with youths which include strengthening their SOC and value systems.

Notes on contributors

Orna Braun-Lewensohn is a lecturer in the masters programme Conflict Resolution and Conflict Management at the Ben Gurion University of the Negev (Israel). She received her PhD at the Faculty of Psychology and Educational Sciences, Urije Universiteit Brussels. Her major research interests include coping resources, coping strategies and mental health outcomes following exposure to terror and war as well as peace education.

Shifra Sagy is professor of psychology, head of Conflict Management and Conflict Resolution program, and chair of the Center for Enhancement in Education at Ben Gurion University of

the Negev. Her major research interests are stress, coping and adjustment to stressors, both normative and non-normative. She is actively involved in peace education in the Palestinian-Israeli context.

References

American Psychological Association. 1996. Contemporary psychology. *APA Review of Books* 43: 372–4.

Angvik, M., and B. von Borries, eds. 1997. *Youth and history: A comparative European survey on historical consciousness and political attitudes among adolescents.* Hamburg: Korber Foundation.

Antonovsky, A. 1979. *Health, stress, and coping: New perspectives on mental and physical well-being.* San Francisco: Jossey-Bass.

Antonovsky, A. 1987. *Unraveling the mystery of health.* San Francisco: Jossey-Bass.

Antonovsky, A. 1993. The structure and properties of the Sense of Coherence Scale. *Social Science & Medicine* 36: 725–33. doi:10.1016/0277536(93)90033-z.

Antonovsky, H., and S. Sagy. 1986. The development of Sense of Coherence and its impact on responses to stress situations. *Journal of Social Psychology* 126: 213–25. http://pao.chadwyck.co.uk/PDF/1268299082716.pdf

Barenbaum, J., V. Ruchkin, and M. Schwab-Stone. 2004. The psychological aspects of children exposed to war: Practice and policy initiative. *Journal of Child Psychology and Psychiatry* 45: 41–62.

Batten, M., and K.A. Oltjenbruns. 1999. Adolescent sibling bereavement as a catalyst for spiritual development: A model for understanding. *Death Studies* 23: 529–54.

Bogy, T.F.M., W.H.J. Meeus, Q.A.W. Raaijmakers, and W.A.M Vollebergh. 2001. Youth centrism and the formation of political orientation in adolescence and young adulthood. *Journal of Cross-Cultural Psychology* 32: 229–40. Doi:10.1177/0022022101032002009.

Boothby, N.G., and C.M. Knudsen. 2000. Waging a new kind of war: Children of the gun. *Scientific American* 282: 60–5.

Braun-Lewensohn, O., and S. Sagy. 2010. Jewish and Bedouin adolescents' stress reactions during 'Oferet Yetuzka' and six months later. [In Hebrew.] *Mifgash: Journal of Social-Education Work* 31: 15–33.

Braun-Lewensohn, O., S. Sagy, and B. Roth. 2010. Adolescents under missile attacks: Sense of coherence as a mediator between exposure and stress related reactions. *Journal of Adolescence.* DOI:10.1016/j.adolescence.2010.01.006.

Breznitz, S. 1986. The effect of hope on coping with stress. In *Dynamics of stress: Physiological, psychological and social perspectives,* ed. M.H. Appley, and R. Trumbull, 295–306. New York: Plenum.

Brown, D. 2009. Operation cast lead – The Shabac report: The statistics of shooting on Israel and the Israeli injuries. http://he.shvoong.com/newspapers/israel/1861660

Cederblad, M., L. Dahlin, O. Hagnell, and K. Hansson. 1994. Salutogenic childhood factors reported by middle-aged individuals. *European Archives of Psychiatry and Clinical Neuroscience* 244: 1–11. http://www.springerlink.com/content/788304j2522m2q41/fulltext.pdf.

Celestin-Westreich, S., and L.P. Celestin. 2005. Families' cognitive emotional adjustment processes when facing Attention-Deficit/Hyperactivity Disorder (ADHD). *Annales Médico-Psychologiques.*

Chiu, L., J.D. Emblen, L. Van Hofwegen, R. Sawatzky, and H. Meyerhoff. 2004. An integrative review of the concept of spirituality in the health sciences. *Western Journal of Nursing Research* 26: 405–28.

Clore, G.L., N. Schwarz, and M. Conway. 1994. Affective causes and consequences of social information processing. In *Handbook of social cognition.* 2nd ed. Vol. 1, ed. R.S. Wyer, Jr, and T.K. Srull, 323–417. Hillsdale, NJ: Lawrence Erlbaum.

Conco, D. 1995. Christian patients' view of spiritual care. *Western Journal of Nursing Research* 17: 266–76.

Feather, N.T. 1995. Values, valences and choice: The influence of values on the perceived attractiveness and choice of alternatives. *Journal of Personality and Social Psychology* 68: 1135–51.

Feldt, T., K. Kokko, U. Kinnunen, and L. Pulkkinen. 2005. The role of family background, school success, and career orientation in the development of sense of coherence. *European Psychologist* 10: 298–308.

Fisher, D.B. 1997. Someone who believed in them helped them to recover. *National Empowerment Center Newsletter* 3: 15.

Freedy, J.R., and S.E. Hobfoll. 1994. Stress inoculation for reduction of burnout: A conservation of resources approach. *Anxiety, Stress and Coping* 6: 311–25. doi:10.1080/10615809408248805.

Freeman, M.A. 1997. Demographic correlates of individualism and collectivism: A study of social values in Sri Lanka. *Journal of Cross Cultural Psychology* 28: 321–42.

Fromm, E. 1968. *The revolution of hope.* New York: Bantam.

Gecas, V. 2000. Value identities, self-motives, and social movements. In *Self, identity and social movements,* ed. S. Styker, T.J. Owens, and R.W. White, 93–253. Minneapolis: University of Minnesota Press.

Hakanen, J.J., T. Feldt, and E. Leskinen. 2007. Change and stability of sense of coherence in adulthood: Longitudinal evidence from the healthy child study. *Journal of Research Personality* 41: 602–17.

Hitlin, S. 2003. Values as the core of personal identity: Drawing links between two theories of the self. *Social Psychology Quarterly* 66: 118–37. http://www.jstor.org/stable/pdfplus/1519843.pdf.

Hitlin, S., and J.A. Piliavin. 2004. Values: Reviving a dormant concept. *Annual Review of Sociology* 30: 359–93. Doi:10.1146/annurev.soc.30.012703.110640.

Hobfoll, S.E., M. Briggs-Phillips, and L.R. Stines. 2003. Fact and artifact: The relationship of hope to a caravan of resources. In *Between stress and hope: From a disease-centered to a health-centered perspective,* ed. R. Jacoby and G. Keinan, 81–104. Westport, CT: Praeger Publishers/Greenwood Publishing Group.

Hofstede, G. 1991. *Cultures and organizations: Software at the mind.* London: McGraw-Hill.

Holdcraft, C., and C. Williamson. 1991. Assessment of hope in psychiatric and chemically dependent patients. *Applied Nursing Research* 4: 129–34.

Isen, A.M. 1990. The influence of positive and negative affect on cognitive organization: Some implications for development. In *Psychological and biological approaches to emotion,* ed. N.L. Stein, B. Leventhal, and T. Trabasso, 75–94. Hillsdale, NJ: Erlbaum.

Kagitcibasi, C. 1997. Individualism and collectivism. In *Handbook of cross-cultural psychology,* Vol. 3, ed. J.W. Berry, M.H. Segall, and C. Kagitcibasi, 1–50. Boston, MA: Ally & Bacon Publishers.

Knafo, A., E. Daniel, and M. Khoury-Kassabri. 2008. Values as protective factors against violent behavior in Jewish and Arab high schools in Israel. *Child Development* 79: 652–67.

Landau, S.F. 1998. Security-related stress and the quality of life. In *Security concerns: Insights from the Israeli experience,* ed. D. Bar-Tal, D. Jacobson, and A. Klieman, 289–310. Stamford, CT: JAI Press.

Landau, S.F., B. Beith-Hallahmi, and S. Levi. 1998. The personal and the political: Israelis' perception of well-being in times of war and peace. *Social Indicators Research* 44: 329–65.

Larsson, G., and K. Kallenberg. 1996. Sense of coherence, socioeconomic conditions and health. *European Journal of Public Health* 6: 175–80.

Lundberg, O. 1997. Childhood conditions, sense of coherence, social class and adult ill health: Exploring their theoretical and empirical relations. *Social Science Medicine* 44: 821–31.

Lazarus, R.S. 1982. Thoughts on the relations between emotions and cognition. *American Psychologist* 37: 1019–24.

Lazarus, R.S. 1991. *Emotion and adaptation.* New York: Oxford University Press.

Mickley, J.R., K. Soeken, and A. Belcher. 1992. Spiritual well-being, religiousness and hope among women with breast cancer. *Journal of Nursing Scholarship,* 24: 267–72.

Moorey, S., and S. Greer. 1989. *Psychological therapy for patients with cancer: A new approach.* London: Heinemann.

Moscardino, U., S. Scrimin, F. Capello, and G. Altoe. 2010. Social support, sense of community, collectivistic values and depressive symptoms in adolescents survivors of the 2004 Beslan terrorist attacks. *Social Science & Medicine* 70: 27–4.

Phinney, J.S., A. Ong, and T. Madden. 2000. Cultural values and integrational values discrepancy in immigrant and non-immigrant families. *Child Development* 71: 528–39.

Poppius, E., L. Tenkanen, R. Kalimo, and P. Heinsalmi. 1999. The sense of coherence, occupation and the risk of coronary heart disease in the Helsinki heart study. *Social Science Medicine* 49: 109–20.

Raviv, A., A. Sade, Alona, Raviv, A., and O. Silberstein. 1998. The reaction of youth in Israel to the assassination of Prime Minister Yitzhak Rabin. *Political Psychology* 19: 255–78.

Rohan, M.J. 2000. A rose by a name? The values construct. *Personality and Social Psychology Review* 4: 255–77.

Sagy, S. 1998. Effects of personal, family and community characteristics on emotional reactions in a community stress situation: The Golan Heights negotiations. *Youth and Society* 29: 311–29.

Sagy, S. 2002. Moderating factors explaining stress reactions: Comparing chronic and acute stress situations. *Journal of Psychology* 136: 407–19. http://proquest.umi.com/pqdweb?did=173133291&sid=1&Fmt=3&clientId=11909&RQT=309&VName=PQD

Sagy, S., and S. Adwan. 2006. Hope in times of threat: The case of Israeli and Palestinian youth. *American Journal of Orthopsychiatry* 76: 128–33.

Sagy, S., and H. Antonovsky. 1996. Structural sources of the Sense of Coherence: Two life stories of Holocaust survivors in Israel. *Israel Journal of Medical Science* 32: 200–5.

Sagy, S., and H. Antonovsky. 1999. Structural resources contributing to the development of Sense of Coherence: Analysis of life stories. [In Hebrew.] *Sichot.*

Sagy, S., and O. Braun-Lewensohn. 2009. Adolescents under rocket fire: When are coping resources significant in reducing emotional distress? *Global Health Promotion* 16: 5–15. Doi:10.1177/1757975909348125.

Sagy, S., E. Orr, and D. Bar-On. 1999. Individualism and collectivism in Israeli society: Comparing religious and secular high school students. *Human Relations* 52: 327–48.

Sami, S., and V. Kraus. 1985. Ethnicity as a factor in status attainment in Israel. In *Research in social stratification and mobility,* ed. R.V. Robinson, 151–76. Grennwich, CT: JAI Press.

Sawatzky, R., A. Gadermann, and B. Pesut. 2009. An investigation of the relationships between spirituality, health status and quality of life in adolescents. *Applied Research in Quality of Life* 4, no. 1: 5–22. Doi:10.1007/sll482-009-9065-y.

Seginer, R. 2005. Adolescents future orientation: Integrational transmission and intertwining tactics in cultural and family setting. In *Culture and human development,* ed. W. Friedlmeier, P. Chakkarath and B. Schwartz, 231–49. New York: Psychology Press.

Seginer, R. 2008. Future orientation in times of threat and challenge: How resilient adolescents construct their future. *International Journal of Behavioral Development* 32: 272–82. Doi:10.1177/0165025408090970.

Sherwood, G.D. 2000. The power of nurse–client encounters: Interpreting spiritual themes. *Journal of Holistic Nursing* 18, no. 2: 159–75.

Snyder, C.R. 1994. Hope and optimism. *Encyclopedia of Human Behavior* 2: 535–42.

Snyder, C.R. 2000. Hypothesis: There is hope. In *Handbook of hope: Theory, measures, and applications,* ed. C.R. Snyder, 3–21. San Diego: Academic Press.

Staats, S. 1989. Hope: A comparison of two self report measures for adults. *Journal of Personality Assessment* 53: 366–75.

Staats, S., and C. Partlo. 1993. A brief report on hope in peace and war, and in good times and bad. *Social Indicators Research* 29: 229–43.

Strang, S., and P. Strang. 2001. Spiritual thoughts, coping and 'sense of coherence' in brain tumour patients and their spouses. *Palliative Medicine* 15: 127–34. Doi:10.1191/0269216601670322085.

Taylor, E.J., M. Amenta, and M. Highfield. 1995. Spiritual care practices of oncology nurses. *Oncology Nursing Forum* 22: 31–9.

Thoits, P. 1994. Stressors and problem solving: The individual as psychological activist. *Journal of Health and Social Behavior* 35: 143–60.

Triandis, H.C., R. Bontempo, V.J. Marcelo, A. Masaaki, and N. Lucca. 1988. Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology* 54: 323–38.

Verkasalo, M., R. Goodwin, and I. Bezmenova. 2006. Values following a major terrorist incident: Finnish adolescents and student values before and after September 11, 2001. *Journal of Applied Social Psychology* 36: 144–60.