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# An intervention for reducing secondary traumatization and improving professional self-efficacy in well baby clinic nurses following war and terror: A random control group trial

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ABSTRACT

*Background:* Due to the terror and war-related situation in Israel, well baby clinic nurses dealing with a large number of traumatized and highly distressed infants, toddlers and their parents have become overwhelmed.
*Objectives:* (1) Assess the level of secondary traumatization, including lack of compassion satisfaction, burnout and compassion fatigue of well baby clinic nurses living under chronic threat of war and terror. (2) Assess the efficacy of an intervention aimed at providing well baby clinic nurses with psycho-educational knowledge pertaining to stress and trauma in infants, young children and parents. This intervention provides the nurses with screening tools for identifying children and parents at risk of developing stress-related problems and equips them with stress management techniques.
*Design:* Quasi-random control trial.
*Setting:* The intervention took place in Israel, in war (North) and terror (South) affected areas.
*Participants:* Ninety well baby clinic nurses from the most war and terror affected areas in Israel were approached, 42 were randomly assigned the experimental intervention and 38 served as a waiting list group.
*Methods:* The intervention was comprised of 12 weekly 6-h sessions. Each session included theoretical knowledge, experiential exercises based on the nurses' work or personal life experience, and the learning of skills accompanied by homework assignments. Participants were assessed on self-report measures of secondary traumatization, professional self-efficacy, hope, sense of mastery and self-esteem before and after the intervention.
*Results:* (1) Well baby clinic nurses were found to have elevated secondary traumatization levels. (2) Compared to the waiting list group, the intervention group improved significantly on the professional self-efficacy measure as well as reducing the level of secondary traumatization. Furthermore, improvement on all secondary traumatization measures covaried with the improvement on the professional self-efficacy assessments. Based on additional informal reports, the improvement was observed to be clinically significant.

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*Conclusions:* Training of medical personnel who work with traumatized children and their families and who may also be under the threat of war and terror is essential to both improving their professional functioning, as well as reducing the vulnerability to secondary traumatization.



**What is already known about the topic?**

- Well baby clinics may in times of war and terror may be the first line respondents for helping traumatized parents and their infants. Nurses in these clinics often lack the skills to help traumatized clients and their children.
- Secondary traumatization is prevalent among medical and paramedical personnel working with traumatized individuals, especially in primary care settings.
- Medical and paramedical personnel, including well baby clinic nurses, working in regions under the threat of war and terror are in need of trauma training to both improve their trauma skills, improve professional self-efficacy and reduce secondary traumatization.

**What this paper adds**

- Secondary traumatization and low levels of professional self-efficacy can be observed in well baby clinic nurses working under the threat of war and terror.
- Trauma training aimed at improving trauma-related professional skills as well as working through personal traumatic experiencing and strengthening resilience may improve trauma-related professional self-efficacy and reduce secondary traumatization.
- Well baby clinics may be an important setting where parents can receive basic coping skills for coping with their own and their children's traumatic experiences, especially when coping with the threat of war and terror.

## 1. Introduction

Studies on the impact of war and terror around the world have identified a range of adverse mental effects on civilians, including posttraumatic stress symptomatology (Rubin et al., 2005; Silver et al., 2002), anxiety and depression (Hobfoll et al., 2006), as well as functional problems (Miguel-Tobal et al., 2006). Research suggests that both adults who experienced the attack directly (Bleich et al., 2003) and those who experienced it indirectly, through the media (Schlenger et al., 2002), show elevated levels of distress, pathology and a lowered sense of security. The impact of terror and war has not been limited to the adult population, but encompasses all age groups, including adolescents (Gil-Rivas et al., 2004), children (Hoven et al., 2002; Koplewicz et al., 2002; Pfefferbaum et al., 2003), young infants and toddlers (Chemtob et al., 2008; Wang et al., 2006a).

Since the First Gulf War in 1990, the Israeli population has paid a heavy toll as the main target of ongoing war and terrorism. Indeed, recent studies have shown the adverse effects of exposure to terrorism (Bleich et al., 2006; Gelkopf et al., 2008a; Shalev et al., 2006), war (Hobfoll et al., 1989; Cohen and Yahav, 2008) and chronic missile and mortar attacks (Dekel and Nuttman-Shwatz, 2009; Besser and Neria, 2009; Gelkopf et al., submitted for publication) on civilian adults, as well as on children and adolescents of various ages (Berger et al., 2007; Gelkopf and Berger, 2009; Pat-Horenczyk, 2005; Sagy and Braun-Lewensohn, 2009; Solomon and Lavi, 2005). Consequently, many psychosocial and mental health services have been set up to help the Israeli civilian population cope with trauma due to war and terror (Baum, 2005; Ben-Gershon et al., 2005; Berger, 2005; Laor et al., 2005). Unfortunately, despite the fact that young infants seem to be especially vulnerable to traumatic stress (Blank, 2007; Mongillo et al., 2009) and that a large number of toddlers exposed to terror attacks have shown significant posttraumatic distress (Pat-Horenczyk et al., 2009; Wang et al., 2006b), very little attention has been given to this population.

In Israel, as in several other countries, Well Baby Clinics are an important component in mothers' care of their young infants. These clinics are government public health clinics that deal with the well-being of the entire family. They provide immunization as well as an array of diagnostic and preventative services. Infants are checked for growth and developmental delays and receive routine screening of vision, hearing, blood pressure, language and development. If problems are detected, primary intervention is provided and further referrals for more professional services are given. WBCs are especially relevant for economically disadvantaged populations due to their free service and easy access.

Due to the absence of adequate care for youngsters and their families during this last decade of chronic terror and war, such as the Second Lebanon War in the north and the continuing mortar attacks against Sderot and the surrounding communities in the south, Well baby clinic staff in these regions have found themselves dealing with a large number of traumatized and highly distressed infants, toddlers and their parents, whose needs can become overwhelming. Although nurses in these settings are trained to provide psycho-educational guidance for various developmental issues, as well as crisis situations, most of them have not been prepared to deal with traumatized youngsters and their parents on such a large scale, nor have they received any trauma-focused training. Furthermore, since many of the nurses live in the vicinity of their work, as well as having friends and family who live in war- and terror-affected areas, the additional exposure to a population of distressed infants and their parents can contribute to a vulnerability and risk for developing secondary traumatization.

Evidence from a large body of literature consistently indicates that health care workers interacting with traumatized populations are at risk of developing secondary traumatization and burnout (Collins and Long, 2003;

Eidelson et al., 2003; Knight, 1997; Kassam-Adams, 2005; Srabin-Farrell and Turpin, 2003; Simon et al., 2005). Although nurses are often exposed to traumatized patients, very few studies examined its impact on this population. Laposa and Aiden (2003) found significant levels of secondary traumatization among emergency unit nurses. Similarly, studies in Israel of nurses exposed to terror and war have found them to be more likely to develop secondary traumatization symptoms (Ben-Ezra et al., 2007; Gates and Gillespie, 2008; Palgi et al., 2009).

Studies have enumerated a number of risk factors for the development of secondary traumatization, including burnout, compassion fatigue and a reduction in compassion satisfaction (Boscario et al., 2004) in helping professionals. These risk factors reflect the situation in which many of the well baby clinic staff might find themselves during the terror attacks and the recent wars and include treating individuals with Post-traumatic stress disorder (PTSD) (Sprang et al., 2007); helping traumatized children (Meyers and Cornille, 2002), identifying with the victims (Herman, 1992), insecurity about the future (Shamai, 1998; Pearlman and Saakvinte, 1995), a conflict of interest between professional and personal goals (Figley, 1985; Wee and Myers, 2002), personal and professional helplessness (Pearlman and Saakvinte, 1995), incapacity to fulfill professional expectations (Aylon and Shaham, 2000; Wee and Myers, 2002) and professional unpreparedness (Raphael, 1986; Ursano et al., 1995). WBC nurses were thus providing services to potentially traumatized young children and their potentially traumatized parents, and were therefore at risk for secondary traumatization.

We have combined the need of Well baby clinic nurses to acquire knowledge regarding traumatic stress, to provide psychological first aid and to assist parents to cope with their children's distress using skills and techniques to prevent secondary traumatization and work-related burnout in a 12-session psycho-educational intervention.

First, the present study examined the prevalence of secondary traumatization and burnout in Well baby clinic nurses who work with populations that have been exposed to war and terror. Second we assessed the efficacy of an intervention aimed at reducing secondary traumatization, as defined by professional burnout, compassion fatigue and the lack of compassion satisfaction. We also assessed the impact of this intervention on the nurses' perception of professional efficiency, sense of mastery and optimism.

## 2. Methods

### 2.1. Setting

The intervention took place between February and May 2007, approximately 6 months after the Lebanon War in the north of Israel and during an intense period of conflict in the south, in a region that sustained daily Qassam missiles and mortar shell attacks. More than 400 such attacks were recorded in the town of Sderot and the area surrounding the Gaza strip during that period. Eighty Jewish and Arab WBC nurses agreed to participate in the study.

### 2.2. Participants

Ninety well baby clinic nurses from the most affected areas in the north and the south of the country offered to participate in the study. From the 80 who agreed, using a random number generator procedure, 42 WBC nurses received the intervention, while 38 were put on a control condition waiting list (WL). The University of Haifa's faculty of social welfare and health science ethics' committee approved the study. All participants signed an informed consent.

### 2.3. Measures

Questionnaires were administered before the intervention and 3 months after the intervention during a follow-up session.

*Demographics* included gender, place of birth (Israel or abroad), marital status (living in couple relationship or single), children (yes/no), residence (inside or outside the exposed region and living in the north or south of the country), religiosity (secular, traditional, religious), ethnicity (Jewish or Arab) and income, assessed by the following question: in relation to the average family's monthly income of NIS 9500 (approx. $ 2400), do you consider your income to be 1-much lower, 2-lower, 3-about the same, 4-higher, 5-much higher?

*Exposure* was measured by asking participants whether, during the Second Lebanon War or the Sderot Qassam attacks, a rocket had fallen in their vicinity (Direct exposure: no, yes but was not hurt, yes and was hurt) and whether a rocket had fallen in the vicinity of a family member or a close friend (Indirect exposure: no, yes but was not hurt, yes and was hurt, yes and died).

*Major lifetime traumatic events* were assessed with a modified version of the Traumatic Event Questionnaire (Vrana and Lauterbach, 1994). Respondents reported whether they had ever experienced each of seven traumatic events unrelated to the chronic terror exposure, including death of a close relative/friend, severe road accident, war exposure (other than the current events), a serious illness, a serious illness of a loved one, physical or sexual abuse, and other life threatening situations (yes/no).

*Professional sense of self-efficacy* was assessed by a modified version for WBC nurses of the Disaster-Helper Self-Efficacy Scale (DHSES, Gelkopf et al., 2008b). This scale was designed specifically to assess different aspects of sense of self-efficacy in helping disaster victims and includes five items related to work as a well baby clinic nurse in times of chronic stress and crisis: confidence; personal difficulty; ability; satisfaction, and sense of capacity (e.g., How confident are you in your ability as a well baby clinic nurse to help clients in times of chronic stress and crisis?) Each question was rated on a five-point Likert scale from 0 = not at all to 4 = very much. In the present study, the DHSES showed a Cronbach's $\alpha = .81$.

*Secondary traumatization (STS)* was conceptualized by Stamm (2005) to include lack of compassion satisfaction (CS), burnout (BO) and compassion fatigue (CF). This was assessed with the Professional Quality of Life scale

(ProQOL; Stamm, 2005). This self-report consists of 30-items measuring the three above mentioned domains of STS Cronbach alpha scores ranged from .77 to .79 indicating adequate internal consistency. This questionnaire queries the experience of professionals as helpers in the last 30 days (e.g., I get satisfaction from being able to help people (CS); I find it difficult to separate my private life from my life as a helper (CF), because of my work as a helper, I feel exhausted (BO)). Items are scored on a five-point Likert scale from 1 = never to 5 = very often. Results are presented as *t*-scores so as to permit comparisons with norms (Stamm, 2009).

*Self-esteem* was assessed with the Rosenberg self-esteem scale (RSE, Rosenberg, 1965), which consists of 10 self-rated items assessing global self-esteem (e.g., "On the whole, I am satisfied with myself") on a scale from 1 to 4 (1 = do not agree to 4 = agree very much). This is the most widely used scale assessing self-esteem. In the present sample, Cronbach alpha reliability was found to be .76.

*Hope* was assessed with the 12-item (including four filler items) self-rated Hope Scale (HS; Snyder et al., 1991; e.g., there are lots of ways around any problem). Response options range from 1 = definitely false to 4 = definitely true (Cronbach's $\alpha$ = .86).

*Sense of mastery* was assessed using the Mastery Scale (Pearlin et al., 1981) that assesses a sense of control over one's life in contrast to being fatalistically ruled. It is a seven-item scale with high reliability and validity data (Robinson et al., 1991). Answers are rated on a four-point scale from 1 = strongly agree to 4 = strongly disagree; e.g., I have little control over the things that happen to me. In the present sample, Cronbach's $\alpha$ was .74.

### 2.4. Intervention

The intervention was designed by the first author (RB) in collaboration with the well baby clinic's chief nurse and the regional supervisors and was based on a need assessment preformed by the regional supervisors. The modules chosen intended to address the difficulties reported by the well baby clinics' nurses during the war, namely, insufficient personal resources to cope with the traumatic conditions, minimal knowledge regarding stress and trauma in young children and lack of techniques to deal with acutely stressed children and their parents. Furthermore some of the work was also based on a resiliency manuals for elementary school children developed by the authors (Berger et al., 2007; Berger and Gelkopf, 2009).

The aims of the intervention were to provide nurses with psycho-educational knowledge pertaining to stress and trauma in infants and young children, to provide them with screening tools for identifying children and parents at risk of developing stress-related problems and to equip them with stress management techniques for both children and adults. This included knowledge regarding attachment theory and the development of the child-parent relationship, the processing of stressful and traumatic experiences, identifying personal strengths and acquiring new coping techniques. Additionally, nurses learned and practiced self-maintenance tools including skills such as breathing, meditation, relaxation, physical exercises, self-affirmation and guided imagery. Finally, techniques were taught and applied so as to enhance staff team-building and mutual support. As can be observed in Fig. 1, these themes are integrated into the 12 sessions.

The intervention was comprised of 12 weekly 6-h sessions in groups of 15–20 nurses. Each session included theoretical knowledge on various topics, experiential exercises where the examples from the nurses' work or personal life experience were shared, learned skills which were practiced during the session and homework assignments in between sessions. Thirty-seven (88.2%) participated in all sessions, three (7.1%) participated in 11 sessions, and 2 (4.7%) participated in 10 sessions. All the nurses got official permission to attend the workshop from the chief nurse responsible for the well baby clinic nurses in the Ministry of Health who supported the project and encouraged their participation. After the intervention, three five-hour supervision sessions were held monthly. The content of each session is presented in Fig. 1.

### 2.5. Analysis

To assess the possible differences between the intervention and the waiting list group, we first performed simple univariate comparisons for demographic and exposure variables between these two groups. To assess the impact of the intervention, we performed Repeated Measures ANOVA with each of the outcome measures as a the time factor and the experimental vs. the control condition waiting list (WL) as group. Finally so as to assess possible interactions between the secondary traumatization scale (STS) factors and professional sense of self-efficacy (DHSES), we entered Time 2 minus Time 1 differential scores of DHSES as covariants in the Repeated Measures ANCOVA procedures for each of the STS factors.

To assess whether the intervention affected differentially nurses with different exposure backgrounds we also performed ANCOVAS on the major dependent variables (DHSES, compassion satisfaction burnout and compassion fatigue) with objective and secondary exposure as covariants. For this purpose we built two continuous Guttman scores to assess severity of personal and secondary exposure.

## 3. Results

### 3.1. Demographics and exposure

The demographic and exposure data are presented in Table 1. Univariate analyses comparing all the demographic and exposure variables showed no significant differences between the groups. Demographic data show all participants to be female, mostly between 40 and 56 years old, less than one-third were born outside Israel, the majority were married and had above average income. High family income was probably due to being older and married. Most were non-religious or traditional and seven were Arab Israelis. Almost half had been personally exposed to a rocket attack, as well as having close relatives who had been exposed, half lived in the Qassam-exposed Sderot (southern area) and half in the Second Lebanon

War-exposed northern area. No differences were found between the intervention and waiting list groups at baseline.

### 3.2. Comparison to norms of Professional Quality of life

Using the cut-off proposed by Stamm (2009) for the Professional Quality of Life scale, at Time 1 for the whole sample, we can observe that 68.7% of the WBC nurses had severe lack of compassion satisfaction (CS), 28.7% had severe burnout (BO) and 20.0% had severe compassion fatigue (CF).

### 3.3. Treatment outcome

Results are presented in Table 2. Compared to the WL control group, the intervention procedure shows a significant improvement on all outcome measures, with the

**Session 1 – Identifying Personal Resources:** Establishing a safe and secure atmosphere, setting goals and expectations and identifying WBC nurses' personal resource profiles. ***Nurses' tasks:*** Observe and monitor one's own coping strategies at home and in the clinic.

**Session 2 – Strengthening and learning new coping skills:** Learning how to strengthen their natural resources as well as acquiring new sensory-motor, cognitive and emotional coping skills in deficient areas. ***Nurses' tasks:*** Practice the new skills at home and in the clinic with the parents.

**Session 3 – Attachment theory and child-parent relationship:** Overview of attachment theory including normative and abnormal transitions based on research and current developmental theories. ***Nurses' tasks:*** Observe and monitor distressed children at home and in the clinic.

**Session 4 – The phenomenology of traumatized young children:** Overview of stressful and traumatized infants and toddlers with a focus on developmental issues, child-parent relationships and attachment patterns. ***Nurses' tasks:*** Observe and monitor distressed children at home and in the clinic.

**Session 5 – Establishing safety and security for young children:** Learning how to help parents foster a safe and secure environment for their children, particularly during stressful and traumatic periods. ***Nurses' tasks****:* Instruct and demonstrate safety inducing techniques to parents.

**Session 6 – Assisting parents to stabilize and soothe young children:** Learning how to teach parents relaxation and affect-modulation strategies for distressed infants and children. ***Nurses' tasks****:* Practice and model the strategies in the clinic with parents.

**Session 7 – Acknowledging and containing the emotional world of young children:** Sensitizing parents to the emotional reactions of children during traumatic stress and teaching them emotional containment techniques. ***Nurses' tasks:*** Practice learned techniques in the clinic with parents.

**Session 8 – Helping parents deal with children's fears:** Gaining knowledge regarding age-appropriate fears and learn ways to normalize and encourage parents to tolerate and handle them. ***Nurses' tasks:*** Practice strategies to handle the children's' fears in the clinic with parents.

**Session 9 – Anger, rage and aggressive behavior of children:** Learning the role of aggression and anger in children during traumatic situations and ways to set limits and express anger in a constructive manner. ***Nurses' tasks:*** Practice ways to deal with anger and behavioral problems with parents'.

**Fig. 1.** Well baby clinic staff preparedness program for dealing with war and terrorism.

**Session 10 - Building a social shield:** Acknowledging the importance of social support during traumatic stress and learning ways to assist parents and themselves to seek social support. ***Nurses' tasks:*** Explore ways to strengthen nurses' peer support as well as enhancing parents' social support.

**Session 11 – Preventing secondary traumatization and burnout: Providing an** overview of signs of secondary traumatization and burnout and exploring the underlying mechanisms. Learning techniques to prevent and decrease these phenomena. ***Nurses' tasks:*** Practice the learned techniques.

**Session 12 - Seeking a better future:** Reviewing all the skills and techniques that were learned in the program and planning how to use them further in the future. Nurses will be given an opportunity for closure. ***Nurses' tasks:*** Establish a stress-prevention program for young children and their parents and apply it within the clinic.

Fig. 1. (*Continued*).

exception of self-esteem. The largest improvements were noted for professional self-efficacy, compassion satisfaction (CF) and burnout (BO).

At Time 2 in the experimental group, only 14.4% had severe lack of CS, 7.1% had severe BO and 11.9% had severe compassion fatigue (CF).

### 3.4. Analyses of covariance

Using a Repeated Measures ANOVA with Time - × Group × the Differential Professional sense of self-efficacy score over Time 1 and Time 2 with the lack of compassion satisfaction as the dependent variable, we observed a significant interaction ($F = 38.17$, $p < .001$). Using the same procedure for the burnout and compassion fatigue measures as dependent variables, we also found significant interactions ($F = 21.22$, $p < .001$; $F = 13.95$, $p < .001$).

Performing ANCOVAS with the professional self-efficacy scale (DHSES), CS, BO, CF as dependent variables × Group × Personal or Secondary exposure (each analysis was done separately), the time by Group interactions remained significant after adjusting for the covariates on all analyses.

## 4. Discussion

Comparing our baseline results for secondary traumatization factors to norms based on two large scale studies, of civilian population (CP) samples (Stamm, 2005) and mental health care providers (MHCP) (Sprang et al., 2007) in the US, our study shows higher levels of CF (22.5% in our sample vs. 13% in CP and 13.2% in the MHCP) and BO (32.5% in our sample vs. 23% in CP and 13% in MHCP) and higher levels of lack of CS (68.7% in our sample vs. 37.0% in CP and 39.3% in MHCP).

Although norms are difficult to compare across countries, our results suggest that well baby clinic nurses in our sample are more vulnerable to secondary traumatization symptoms than regular health providers. These results can be attributed to the extent and nature of both the ongoing direct exposure due to living and working in areas under threat and indirect exposure as a result of working with traumatized families. Indeed, the vulnerability of the helping professionals working in complex trauma-related situations has already been documented (Stamm et al., 2004). Furthermore, the lack of knowledge and experience related to trauma work could have been an additional factor contributing to secondary traumatization (Beaton and Murphy, 1996; Johnsson et al., 2003; Meyers and Cornille, 2002; Pearlman and Saakvinte, 1995; Raphael, 1986; Sprang et al., 2007). As reported in previous studies, the conflict of loyalty between wanting to care for and be with one's family and the commitment to one's patients that was reported by the majority of the nurses during the intervention might have added to their level of distress (Hodgkinson and Stewart, 1991; McCann and Pearlman, 1990; Wee and Myers, 2002).

Our intervention had several positive effects. The largest improvements were observed on the Compassion Satisfaction measure. This result is concurrent with Sprang's study (Sprang et al., 2007), showing that specialized trauma training is strongly correlated with CS, and that it has therefore been suggested to focus on trauma-related skills to reduce secondary traumatization in the trauma-related helping professions (Stamm et al., 2004; Gates and Gillespie, 2008; Sprang et al., 2007). Indeed, our intervention was "strength-based" (Duncan et al., 2004; Rapp, 1998; Saleebey, 2009) combined with skill training (Berger, 2005; Ford and Russo, 2006; Gelkopf and Berger, 2009; Saakvitne et al., 2000). This approach assumes that most individuals have the basic capacity to enhance their resiliency by tapping into their own resources as well as by acquiring new coping skills and thus becoming more efficient in their professional field. Contrary to trauma-related interventions focusing on

**Table 1**
Demographics, exposure, perceived threat and traumatic life events in the experimental condition and the control condition waiting list (WL) conditions at baseline.

| | Experimental condition ($n = 42$) | | Waiting list (WL) condition ($n = 38$) | |
|---|---|---|---|---|
| | *N* | % | *N* | % |
| Gender | | | | |
| Female | 42 | 100 | 38 | 100 |
| Age in years, *M* (*SD*) | 49.3 | (7.4) | 47.7 | (7.1) |
| Place of birth | | | | |
| Israel | 31 | 73.8 | 26 | 68.4 |
| Elsewhere | 11 | 26.2 | 12 | 31.6 |
| Marital status | | | | |
| Married | 36 | 85.7 | 35 | 92.1 |
| Single | 6 | 14.3 | 3 | 7.9 |
| Income | | | | |
| Below average | 2 | 4.8 | 6 | 15.8 |
| Average | 11 | 26.2 | 3 | 7.9 |
| Above average | 29 | 69.1 | 29 | 76.4 |
| Religion | | | | |
| Secular Jewish | 22 | 52.4 | 14 | 36.8 |
| Traditional Jewish | 14 | 33.3 | 11 | 28.9 |
| Religious Jewish | 4 | 9.5 | 8 | 21.1 |
| Muslim | 2 | 4.8 | 5 | 13.2 |
| Objective exposure | | | | |
| Personally not exposed | 24 | 57.1 | 20 | 52.6 |
| Personally exposed but not hurt | 17 | 40.5 | 18 | 47.4 |
| Personally exposed and physically hurt | 1 | 2.4 | 0 | 0 |
| Secondary exposure | | | | |
| No close relative exposed | 22 | 52.4 | 15 | 39.5 |
| Close relative exposed and not hurt | 15 | 35.7 | 19 | 50 |
| Close relative exposed and hurt | 4 | 9.5 | 3 | 7.9 |
| Close relative exposed and died | 1 | 2.4 | 1 | 2.6 |
| Perceived threat, range 0–4, *M* (*SD*) | | | | |
| Threat to self | 1 | 0.9 | 0.7 | 0.8 |
| Threat to family and friends | 1.4 | 0.9 | 1.1 | 0.9 |
| Number of major traumatic events, *M* (*SD*) | 3.1 | 1.8 | 2.7 | 1.7 |

processing the traumatic experiences of the workers (Danieli, 1985; Mitchell and Everly, 2000; Pearlman and Saakvinte, 1995), our approach is present-oriented, skill-focused and incorporates self-maintenance techniques as well as being future-oriented through the development of a positive outlook and hope. Such an approach seems to have the added advantage that it affects all other aspects of secondary traumatization, including burnout, compassion fatigue and sense of self-efficacy, as witnessed by an improvement on all these measures. Furthermore our results also suggest the intervention to be helpful for all well baby clinic nurses irrespective of their level of exposure.

An additional explanation as to why Compassion Satisfaction was greatly improved might lie in the fact that peers and trainers were able to acknowledge and bear witness to the great courage and dedication that these nurses demonstrated, sometimes under fire. This might have made them more aware and proud of their own strength and their contribution made to their clients, making them more satisfied of their work achievement. This may have not been fully acknowledged before neither

**Table 2**
Repeated measures ANOVA of general professional functioning, stress-related professional functioning, self-worth, hope, sense of control and secondary traumatization in well baby clinic nurses before and after the intervention or waiting list control condition.

| | Experimental condition ($n = 42$) | | | | Control/waiting list condition ($n = 38$) | | | | Time | Time × group | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Before | | After | | Before | | After | | | | |
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | $F_{(1,79)}$ | $F_{(1,79)}$ | *ES* |
| DHSES | 11.2 | 2.3 | 15.2 | 2.0 | 13.2 | 2.2 | 13.1 | 2.4 | 37.8*** | 40.5*** | .34 |
| Self-esteem | 36.4 | 2.9 | 37.4 | 3.5 | 36.2 | 3.9 | 32.1 | 3.9 | 2.2 | 2.8 | .03 |
| Hope | 26.5 | 3.5 | 27.5 | 3.3 | 26.6 | 2.9 | 26.7 | 3.0 | 7.1*** | 5.3* | .06 |
| Sense of mastery | 21.3 | 3.2 | 23.7 | 3.3 | 21.7 | 3.0 | 21.6 | 3.0 | 5.6* | 7.8*** | .09 |
| Compassion satisfaction (CS) | 36.52 | 4.4 | 53.64 | 8.8 | 40.24 | 5.1 | 45.97 | 9.8 | 16.5*** | 41.1*** | .35 |
| Burnout (BO) | 51.18 | 10.2 | 45.34 | 7.8 | 48.69 | 9.8 | 52.93 | 11.4 | .05 | 21.8*** | .22 |
| Compassion fatigue (CF) | 51.46 | 9.7 | 46.78 | 9.7 | 48.38 | 10.2 | 51.33 | 10.3 | .03 | 12.8*** | .14 |

DHSES, Disaster-Helper Self-Efficacy Scale; CS, BO and CF are the factors of the secondary traumatization scale (STS); ES, effect size.
* <.05.
*** <.001.

by their supervisors nor by their employers. Another factor that might have contributed to the reduction in secondary traumatization is the fact that the intervention was performed in a peer-group and that the trainers focused on developing group cohesion. This is particularly important as some of the nurses work in shifts and often do not have enough collegial support. Indeed, other researchers have also emphasized the importance of group support in preventing and ameliorating the symptoms of secondary traumatization (Figley, 1989; Catherall, 1999; Stamm et al., 2004).

In line with these results we could also observe an improvement in the nurses' perception of their sense of professional self-efficacy.

This multi-modality intervention has thus helped well baby clinic nurses to experience greater efficacy and more compassion satisfaction. Further research testing components, including briefer versions that would be more feasible in most well baby clinics or other health/social services clinic setting, is needed to determine what really accounts for the observed improvements, and whether this has also affected the service received as well as reduced stress symptoms in parents and their offspring.

A major conclusion from this study is the importance of training medical personnel in civilian war zones to improve their professional functioning. Second, well baby clinics might be one of the better places for the early detection and early intervention of trauma-related symptoms. It has the advantage of being repeatedly visited by most parents after birth, therefore providing ongoing in vivo observation of child reactions as well as parent–child interactions. Unlike mental health clinics, or even psychiatric child services, well baby clinics are relatively stigma-free. The trauma-related psychosocial services are provided in addition to the regular medical and developmental services.

This study has several limitations. First, we did not have Israeli norms and thus did not assess whether our sample indeed experienced significant STS. Second, our samples were relatively small and therefore might not represent the entire population. Third, in evaluating the efficacy of our intervention, we compared our experimental group to a waiting-list group rather than to another active intervention, and thus we cannot rule out the possibility that the results were due to the attention received by the nurses in the experimental group.

Fourth, as the majority of nurses were from different clinics, it is also possible that the control group waiting list recipients who worked in close working proximity to the "lucky" recipients may have been discouraged by not having been chosen for this intervention, which may have biased them toward poorer responses. On the other hand it is also possible that a positive spill-over effect may have influenced nurses into informally acquiring knowledge, new skills and a change in attitudes in the waiting list group.

A final limitation is that the posttest assessments were done just after the 3 months supervision sessions that helped the nurses apply the intervention. Whether the positive changes would be maintained once the meetings ended is not known. A follow-up assessment after several months of no contact would be needed to assess the sustainability of the results.

### 4.1. Clinical implications

These results suggest that interventions for reducing secondary traumatization are important and should be considered not only for mental-health professionals but also for health professionals who are often the first to be confronted by help seekers and who might have insufficient trauma-related knowledge and skills. Furthermore, ongoing supervision and support might be important in preventing secondary traumatization and ensuring the quality of medical service.

The present study shows that it is possible to reduce compassion fatigue and burnout significantly, as well as improving compassion satisfaction and sense of professional self-efficacy in well baby clinic nurses.

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None declared.

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University of Haifa ethics committee.

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