Group identification and self-efficacy associated with quality of life in emergency medical services volunteers: A cross-sectional investigation

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Abstract

Volunteering in emergency medical services (EMS) plays a fundamental role in the improvement and maintenance of collective and community health. However, this work often requires rescuers to deal with very stressful situations with consequences in terms of decreased quality of life and psychological well-being. The aim of this work was to analyze the resources that can be positively associated with volunteers' quality of life. In particular, based on social identity and social cure approaches, we tested the effect of self-efficacy and identification with a volunteer category on both positive and negative aspects of the volunteers' professional quality of life. A self-report questionnaire was administered to 203 EMS volunteers (53.7% men) from a large nonprofit volunteer association. Results are mostly supportive for social identity and social cure approaches, and show that professional identification and self-efficacy were differently linked to the dimensions of the volunteers' quality of life. More precisely, professional identification was negatively associated with burnout and positively associated with compassion satisfaction, and both effects were mediated by self-efficacy. On the contrary, we found no effect of self-efficacy and volunteer identification on secondary traumatic stress. Practical implications for volunteers' wellbeing are discussed in the light of the policies of volunteer associations to improve collective resources.

Keywords: volunteers, quality of life, group identification, self-efficacy, burnout, secondary traumatic stress, emergency medical services,

> "I realized that my training was useful in less than ten percent of the calls, and saving lives was rarer than that. After a while, I grew to understand that my role was less about saving lives than about bearing witness. I was a grief mop. It was enough that I simply turned up."
>
> (Frank Pierce, Bringing Out the Dead)

Introduction

Volunteering in emergency medical services (EMS) is one of the most important kinds of work that people can offer, unpaid, to their communities as well healthcare services. EMS volunteers fill an extraordinarily important role for an effective functioning of healthcare systems as well as for the improvement and maintenance of collective health and care. In fact, EMS volunteers supply first-aid interventions, operate in life-threatening emergencies and support registered medical and nursing staff. For these reasons, EMS volunteers often deal with highly stressful situations. It is well-known that distress associated with exposure to traumatic and life-threatening events can lead EMS professionals to experience psychological problems such as depression, compassion fatigue, reduced quality of life, burnout (Abellanoza, Provenzano-Hass, & Gatchel, 2018; Adriaenssens, de Gucht, & Maes, 2012; Crawford & Daniels, 2014; Stathopoulou, Karanikola, Panagiotopoulou, & Papathanassoglou, 2011), posttraumatic stress disorder (PTSD, e.g., Adriaenssens et al., 2012; Patterson et al., 2012) as well as suicidal ideation and/or attempts (Martin, Tran, & Buser, 2017). Unfortunately, EMS volunteers encounter the same psychological distress as paid healthcare professionals, with the risk of experiencing intense stress and burnout as well as the risk of developing PTSD. It has been shown that, although EMS volunteers are not forced to perform activities, they are at risk of developing an array of mental symptoms (Bryant & Harvey, 1995; Martin et al., 2017). For example, Essex and Scott (2008) detected an alarming percentage of people with higher levels of burnout (especially emotional exhaustion and depersonalization) among volunteer EMS personnel. Unfortunately, research on EMS volunteers is quite rather sparse, but some useful insights about their psychological (mal)adjustment can derive

from another kind of volunteer, namely firefighter volunteers. Firefighter volunteers perform different tasks and activities than EMS volunteers but both volunteer categories could be considered similar for some aspects such as non-paid work, emergency interventions, dealing with human sufferance as well as possibility to exposure to traumatic events. For example, Stanley, Hom, Hagan and Joiner (2015) discovered that firefighter volunteers were significantly more likely to report suicide plans and attempts than full-time firefighters. Moreover, Bryant and Harvey (1995) found evidence of PSTD symptoms in one-quarter of volunteer firefighters. Dean, Gow and Shakespeare-Finch (2003) found that career firefighters reported more psychological distress than volunteers, but this difference was modest. These psychological maladjustments may, in turn, be associated with increased turnover among paid professionals and quitting volunteer activities among non-paid personnel (e.g., Geurts, Schaufeli, & De Jonge, 2011; Jaffe, Sasson, Knobler, Aviel, & Goldberg, 2012; Ross, Greenfield, & Bennett, 1999).

In the light of the fundamental role that volunteer rescuers are increasingly playing – especially in times of economic crisis and reduced welfare - to detect the factors affecting and promoting volunteers' psychological well-being is of primary importance from a psychological, community as well as healthcare system point of view. While research on these topics has been done on professionals in general, and on EMS professionals in particular, less is known about EMS volunteers. In order to start to partially fill this knowledge gap, the aim of this work has been to assess the role of self-efficacy and volunteer identification on the quality of life in a sample of EMS volunteers.

Improving the quality of life in EMS volunteers

Given its relevance, how to improve the quality of life in EMS *professionals* has received growing attention over the last few years. In particular, most of the research has been focused on psychological and psychosocial factors that can reduce burnout, fatigue and post-traumatic symptoms in EMS professionals (e.g., Bakker, Demerouti, & Sanz-Vergel, 2014; Patterson et al., 2012; Zhang, Zhang, Han, Li, & Wang, 2018). Research has thus highlighted several aspects

affecting EMS personnel's quality of life, some of which pertain to situational (e.g., task characteristics) and organizational domains (e.g., job demands and scheduling), and others to psychological and psychosocial domains (e.g., personality and self-esteem; Molero, Pérez-Fuentes, & Gázquez, 2018; Schaufeli, Salanova, González-Romá, & Bakker, 2002). Among the latter, self-efficacy has been shown to be especially relevant. Self-efficacy can be defined as the individual's belief to be able to control and influence behaviors, thoughts and feelings about future events (Flammer, 2015). Research has demonstrated that people who are high in self-efficacy are more determined when facing challenges and are more likely to use adaptive coping strategies (Bandura, 1982; Zeiss & Gallagher-Thompson, 1999). High self-efficacy is also linked to positive affects while low self-efficacy is associated to negative affects (Zeiss & Gallagher-Thompson, 1999). Self-efficacy has proved to reduce the level of distress among emergency workers (e.g., Gibbs, 1989; McCammon, Durham, Allison, & Williamson, 1988; Prati, Pietrantoni, & Cicognani, 2011) to reduce depressive and post-traumatic symptoms (Regehr, Hill, & Glancy, 2000) and burnout (e.g., Cicognani, Pietrantoni, Palestini, & Prati, 2009; Consiglio, Borgogni, Vecchione, & Maslach, 2014), and to increase volunteers' well-being (Brown, Hoye, & Nicholson, 2012). Self-efficacy also mediates the relationship between workload and burnout (Molero et al., 2018) and increased job satisfaction and performance in nurses (Judge & Bono, 2001).

Another important factor that can have positive effect on quality of life among EMS professionals is professional identification, that is to say the extent to which professionals feel tied to their working category along with the sense of pride and intention to adhere to professional duties (Caricati et al., 2015, 2014; Marletta et al., 2014; Meyer & Allen, 1997). This aspect has mainly been investigated within the social identity approach (see e.g., S. A. Haslam, Jetten, Postmes, & Haslam, 2009). According to social identity theory (SIT, Tajfel & Turner, 1979), group membership (including professional and volunteer membership) supplies people with knowledge about themselves (i.e. their social identity) so that people are motivated to support their membership and to comply with norms and requests that such social identity implies. Research in the social identity

tradition, and in particular the so-called "social cure" approach (Jetten, Haslam, Haslam, Dingle, & Jones, 2014), suggests that group membership may be a resource that increases general health outcomes. Social groups are important resources because they supply the basis for social support, shared meanings, sense of belonging and control as well as self-efficacy (S. A. Haslam et al., 2009; Jetten et al., 2017), and this provides individuals with psychological resources that enable them to face stress, adversity, and anxiety effectively (Cruwys, South, Greenaway, & Haslam, 2015; DeMarco & Newheiser, 2019; Jetten et al., 2014; Leach, Mosquera, Vliek, & Hirt, 2010). For example, meta-analytical evidence shows that social identification is positively associated with individuals' health in organizational settings (Steffens, Haslam, Schuh, Jetten, & van Dick, 2017). Moreover, Haslam, O'Brien, Jetten, Vormedal and Penna (2005) found that group identification was associated with increased life/job satisfaction and decreased stress among patients recovering from heart surgery and among bomb disposal officers. Furthermore, Lammers, Atouba and Carlson (2013) reported that professional and work group identifications were associated with lower levels of burnout. Considering EMS settings, professional identification has proven to increase job satisfaction among nurses (Caricati et al., 2014; Lu, While, & Louise Barriball, 2007) and to reduce turnover (Elias, 2006). Professional identification was also inversely correlated with experience of stress and burnout (Reilly, 1994). Thus, research indicates that apart from increasing people's wellbeing and resilience, professional identification may reduce the risk of psychological distress in EMS (paid) professionals.

With respect to volunteering, research has shown that highly identified volunteers were more likely to be satisfied and motivated to continue as volunteers (e.g., Grube & Piliavin, 2000; Romaioli, Nencini, & Meneghini, 2016). However, less attention has been devoted to the role of identification on EMS volunteers' professional quality of life and well-being. This is surprising given the particular nature of EMS volunteering. Volunteer rescuers, like other volunteers, receive no payment for their work and *choose* to remain, or leave, the nonprofit organization for purely non-material, intrinsic, motivations (Setti et al., 2018). This suggests that people enter volunteering

and remain volunteers on the grounds of "socio-psychological" reasons, that is, reasons that allow people to satisfy some psychological and social needs. For example, research into the volunteer process model (Omoto & Snyder, 1995) has shown that people start volunteering in order to express their humanitarian and prosocial values, increase social interactions, embrace new learning experiences and knowledge, but also for career-related concerns or expectations and protecting or enhancing their Ego and self-esteem (e.g., Willems et al., 2012). Thus, motivations appear to be of great importance so as to understand volunteers' intention to stay or quit. Along with these motivations, also the need to belong can supply important *intrinsic* motivational needs (Emrich & Pierdzioch, 2016; Setti et al., 2018). Indeed, emerging research on the social cure effect indicates that group identification contributes to members' well-being because it allows several psychological needs to be satisfied (Greenaway, Cruwys, Haslam, & Jetten, 2016; e.g., Greenaway et al., 2015). It is possible to speculate that, according to the social identity approach, identification with volunteer group supplies rescuers with a sense of self through a relationship between the self and a social entity that the individual perceives and desires to be positive and valuable. Hence, highly identified volunteers should be more motivated to accomplish their voluntary activities and better prepared psychologically to face the challenges and demands that stem from their rescue service (Lammers & Garcia, 2009). It can be expected, therefore, that identification with the volunteering category will lead to experiencing a better quality of life and less stress also among EMS volunteers (Carmeli, Gilat, & Waldman, 2007; Lammers & Garcia, 2009).

Aims and expectations

The aim of this work was twofold. First, we were interested in observing whether group identification and self-efficacy are linked to professional well-being also in a relatively under-investigated population such as EMS volunteers. In fact, although EMS volunteers could be considered similar to EMS professionals for some rescue-linked aspects, they show some peculiarities that appear to be critical. In general, the literature has shown that the same task is experienced differently depending on whether it is performed on voluntary or monetary basis (e.g.,

Bassi & Fave, 2012; Delle Fave & Massimini, 2003). Accordingly, Sartori and Delle Fave (2014) documented that EMS volunteers, when compared with professionals, reported they had experienced lower levels of skills and clear ideas but higher levels of anxiety during the rescues tasks. Moreover, volunteers were more likely to associate rescue with short-term goals, while professionals associated their activities with both short- and long-term goals. This suggests that for EMS volunteers long-term commitment with rescuers is less easy to reach than for professionals who, according to Sartori and Delle Fave's (2014) work, appear better able than the volunteers to cope with rescue challenges. Given the importance of EMS volunteers for healthcare systems, these aspects make the EMS volunteers an important population to be studied. Second, we wanted to consider the effects on both the negative and positive aspects of professional well-being, as the absence of negative effects does not imply *ipso facto* the presence of a positive experience for volunteers. We adopted the compassion satisfaction/fatigue framework (Stamm, 2010) that explicitly deals with professional quality of life among helpers, considering it to be distinct in positive (i.e., compassion satisfaction) and negative (i.e., compassion fatigue) aspects (Figley, 1995; Stamm, 2002). Compassion fatigue, in turn, incorporates two distinct aspects: burnout and secondary traumatic stress that are negative outcomes of working with suffering persons. In this framework, burnout is considered a unidimensional construct (Shoji et al., 2016) that combines emotional exhaustion, cynicism and reduced accomplishment (Maslach, Schaufeli, & Leiter, 2001). Secondary traumatic stress, instead, is defined as "a negative feeling driven by fear and work-related trauma" (Stamm, 2010, p.8) . It is worth noting that, albeit burnout and secondary traumatic stress produce similar health outcomes (e.g., depression, anxiety, loneliness; Cicognani et al., 2009), they have notable differences. Burnout generates from a strong, prolonged and unavoidable job stress and usually has a gradual onset (Stamm, 2010), while secondary traumatic stress is the sudden effect of direct or indirect exposure to extremely stressful events (Figley, 1995; Stamm, 2010). Thus, while burnout and secondary traumatic stress are part of the construct of compassion fatigue, they capture different aspects of the negative effects of working with suffering people. For

example, while exposure to traumatic events could increase the likelihood of developing burnout (Stamm, 2010), burnout syndrome could appear also without exposure to trauma. For this reason, we believe it is important to consider both sides (e.g., prolonged and sudden exposure to stress) of compassion fatigue. Furthermore, in an attempt not to limit the analysis of rescuers' wellbeing to the absence of negative outcomes, we also considered positive outcomes. According to Positive Psychology (e.g., Seligman & Csikszentmihalyi, 2000), considering both discomfort and positive aspects of human's activities is important in order to understand people's quality of life in a more constructive way, and to address positive subjective experiences that are linked to individual well-being. Accordingly, to analyze both negative and positive dimensions of quality of life in EMS volunteers is important because it allows us a) to consider the co-occurrence of positive and negative aspects (i.e., volunteers can experience stress and fatigue while contemporaneously being satisfied with their activities), and b) to address whether the same set of variables (i.e., identification with volunteers and self-efficacy) can supply both protection and incentives for stress, burnout and satisfaction. In particular, we considered 'compassion satisfaction' that is the positive feelings that stem from helping traumatized or suffering persons (Sacco & Copel, 2018; Stamm, 2002). A recent meta-analysis (Zhang et al., 2018) has confirmed that compassion fatigue and compassion satisfaction are related but relatively independent from one another as compassion satisfaction was moderately and inversely correlated with burnout but was only weakly (and negatively) correlated with secondary traumatic stress.

Our first expectation was that self-efficacy would be positively correlated with compassion satisfaction (hypothesis 1a) and negatively correlated with both burnout (hypothesis 1b) and secondary traumatic stress (hypothesis 1c). This because volunteer rescuers who are high in self-efficacy should be better equipped to cope adaptively to volunteering stressors and to derive satisfaction from their activities (e.g., Molero et al., 2018). The second expectation was that identification with volunteers would be positively associated with compassion satisfaction (hypothesis 2a) and negatively with both burnout (hypothesis 2b) and secondary traumatic stress

(hypothesis 2c). This because, according to social identity and social cure approaches, identification with volunteers should sustain a positive sense of self and a greater adhesion to volunteering values and norms among EMS volunteers. This, in turn, should help rescuers to cope efficaciously with volunteering stressors and hence reduce distress.

Along with these expectations, we also considered the mediation role of self-efficacy on the relationship between identification and quality of life dimensions. Research has indeed shown that group identification bolsters perceived self-efficacy (e.g., Heath, Rabinovich, & Barreto, 2017). In terms of SIT, this occurs because the feeling of being linked to a particular group drives members to perceive they possess similar abilities as, and to be able to behave like, other ingroup members (Guan & So, 2016). As a source of vicarious experience and persuasion, group membership can help people to develop a belief in their abilities and capabilities to perform particular job and tasks (e.g., D. M. Haslam, Pakenham, & Smith, 2006). Accordingly, some research has shown that social belonging can increase self-efficacy in a sample of new mothers (D. M. Haslam et al., 2006), in war survivors (Kellezi, Reicher, & Cassidy, 2009) and in urban communities (Heath et al., 2017). Although not yet investigated, we speculated that these processes could be at work also among EMS volunteers. Thus, we expected volunteers' identification to boost perceived self-efficacy that, in turn, would be positively associated with quality of life in EMS volunteers. In sum, we expected that identification would be positively correlated with self-efficacy (hypothesis 3) which, in turn, would mediate the relationship between identification and compassion satisfaction, secondary traumatic stress and burnout (hypotheses 4a, 4b, 4c).

Method

The context of the research

We surveyed EMS volunteers from a large volunteer nonprofit association (VNA) in a region of northern Italy. VNA was founded in 1907 and is devoted to providing healthcare assistance to people. VNA counts 37 operating sites with almost 6,000 affiliates (both volunteers and supporting members) and about 230 employees supplying about 200,000 services in 2018. The

services carried out by volunteers and employees are linked primarily to emergency and socio-health transport, as well as urgent care, tele-assistance and organization of first-aid courses in primary and secondary schools. VNA is under the control of Public Health Authorities and is active round-the-clock, with its activities routinely organized into shifts. Usually, volunteers are organized in crews of 3-4 people who are alerted by the regional office of the emergency medical services that answer calls from citizens.

Participants and procedure

We used a web-based survey to collect the data. We asked each center to participate in the research and to send an e-mail to their active volunteers. The e-mail contained the invitation to take part in research about volunteers' wellbeing and a link that redirected to the survey. The first page contained information about the survey and the informed consent. It was explained that participation was voluntary and without reward, that participants could quit the questionnaire at any time, and that consent to participate was expressed by taking the survey. We are not able to state the exact number of centers that actually sent the e-mail as some of the centers did not respond to our invitation; furthermore, we are not able to state exactly the size of the surveyed population. The survey was open from 15 November 2018 to 15 December 2018. To our knowledge, no extraordinary emergency events occurred during that period.

Two-hundred and three EMS volunteers from 13 different sites responded to the questionnaire. However, considering that the VNA had 4,193 volunteers in 2018 (some of them are not active volunteers actually), our sample represents 5% of the population. Fourteenth missing values (0.07%) appeared on demographic variables and were imputed with multivariate imputations by chained equations and predictive mean matching (van Buuren & Groothuis-Oudshoorn, 2011). One-hundred nine (53.7%) were men and the mean age was 37.96 years (*SD* = 12.29, range = 20-69). On average, participants had served as volunteers for 9.64 years (*SD* = 7.42) and performed 4.02 (*SD* = 1.80) service shifts for month.

Measures

Quality of life was measured with the fifth version of the professional quality of life scale (ProQoL, Stamm, 2010). The scale is the most used measure of positive and negative effects of working with suffering people (Stamm, 2010), and consists of 30 items asking participants to indicate the extent to which they had experienced some feelings and emotional states (e.g., "I am happy" and "I have beliefs that sustain me") in the last 30 days on a 5-point Likert scale (1 = *never*, 5 = *very often*). The scale measures three dimensions that are related to the professional quality of life, namely compassion satisfaction (e.g., "I get satisfaction from being able to help people"), burnout (e.g., "I feel worn out because of my work as a helper") and secondary traumatic stress (e.g., "I am preoccupied with more than one person I help"). Scores for each dimension are computed as the sum of the intended items and raw scores are then transformed in t-scores with mean of 50 and standard deviation of 10.

Self-efficacy was measured with the personal self-efficacy scale (Barbaranelli & Capanna, 2001) which consisted of 18 items asking volunteers to indicate the extent to which they felt able to cope efficaciously with situation they faced as volunteers (e.g., "Answer promptly to requests for help from the patient" and "Being an effective emotional support for the patient"). Responses were on a 5-point Likert scale (1 = *not capable at all*; 5 = *very capable*). This scale was developed for assessing volunteers' self-efficacy among Italian volunteers and proved to be reliable. Scores were computed as the mean of all the items.

Volunteer identification was measured with six items (e.g., "I am proud to be a volunteer") adapted from Owuamalam, Rubin, and Issmer (2016) and one additional item ("I identify with the volunteer group") adapted from Postmes, Haslam and Jans (2012). Ratings were on a 5-point Likert-type scale (1 = *completely disagree*, 5 = *completely agree*). Given that scores were highly correlated ($r(203) = .62$, $p < .001$), the final score of identification was computed as the mean of the 7 items.

Additional measures were also collected in order to check for their potential effects on the investigated relations. Given the motivational relevance of professional identity and the fact that, according to the volunteer process model (Omoto & Snyder, 1995), motivations are of crucial importance for understanding people's choice to become and remain a volunteer, we also measured volunteering motivations. In particular, we administered the Italian version (Barbaranelli, Caprara, Capanna, & Imbimbo, 2003) of the Volunteer Function Inventory (Clary et al., 2005). This scale comprises 30 items and measures six motivations driving volunteers: expression of altruistic and humanitarian values (value dimension, e.g., "I feel it is important to help others"), acquiring and/or improving knowledge and skills (understanding dimension, e.g., "Volunteering allows me to gain a new perspective on things"), social adjustment and adaption (social dimension, e.g., "People I know share an interest in community service"), enhancing professional and academic possibilities (career dimension, e.g., "Volunteering will help me to succeed in my chosen profession"), protecting the ego (protective dimension, e.g., "Volunteering is a good escape from my own problems") and improving self-development and self-esteem (self-enhancement dimension, e.g., "Volunteering makes me feel important"). For each item, the answers were on a 5-point Likert-type scale (1 = not at all important, 5 = extremely important).

We also collected the demographic characteristics of participants such as gender, age, length of stay in a volunteering association and number of shifts per month.

Results

Preliminary analysis

The scales appeared to have satisfactory internal reliability as indicated by Cronbach's alpha (see table 1), except burnout that had a slightly poorer reliability than the desired value. This, however, is congruent with results from other studies, especially with non-Anglophone participants (Galiana, Arena, Oliver, Sansó, & Benito, 2017; Teffo, Levin, & Rispel, 2018). We preliminarily analyzed zero-order correlations among considered variables (see table 1), and computed variance inflation factor (VIF) in order to check for multicollinearity (Naimi, Hamm, Groen, Skidmore, &

Toxopeus, 2014): no multicollinearity concerns appeared as VIF values were lower than 4 (Hair, Black, Babin, & Anderson, 2010; min = 1.32, max = 3.21; if motivations were excluded: min = 1.17, max = 2.23). Unexpectedly, secondary traumatic stress was positively (albeit weakly) correlated with compassion satisfaction. This is not completely surprising given that another Italian study showed that secondary traumatic stress was not correlated with compassion satisfaction (Palestini, Prati, Pietrantoni, & Cicognani, 2009). Moreover, inspection of scores revealed that people with low compassion satisfaction tended to have medium-low score of secondary traumatic stress but medium-high levels of burnout, while people with high compassion satisfaction scores tended to have medium-high levels of secondary traumatic stress but medium-low levels of burnout. This picture well fits the situation of high secondary traumatic stress and high compassion satisfaction associated with low burnout (Stamm, 2010), that is a combination characterizing works and situations in which rescuers feel that "their work matters," but experiences of rescuers are similar to that of rescued people. Given that our rescuers routinely operate in small communities, it is possible that volunteers personally know several of the people that they help(ed), or that events in which they operate are similar to events that harmed, or could harm in the future, their relatives, friends or acquaintances. Thus, it is possible that rescuers are satisfied with their volunteer activities, but feel that the situations they experience are potentially connected with themselves. This speculation appears to be confirmed by positive correlations between secondary traumatic stress and motivations to volunteers, especially self-enhancement, improving skills and social adaption, which suggest that the volunteers' motivational investment in volunteering is positively associated with secondary traumatic stress (as well as with compassion satisfaction but negatively correlated with burnout).

Table 1 also indicate that in line with hypotheses 1a and 1b, self-efficacy was positively correlated with compassion satisfaction and negatively with burnout. Contrary to expectations (hypothesis 1c), however, there was no significant correlation with secondary traumatic stress. Moreover, identification with volunteers was positively correlated with compassion satisfaction and

negatively correlated with burnout, as expected from hypotheses 2a and 2b. Surprisingly, identification was positively correlated with secondary traumatic stress so that the more volunteers were identified with the rescuer group, the more they experienced secondary traumatic stress. Further, in line with expectations, identification was positively correlated with self-efficacy.

Table 1 about here

Hypothesis testing

In order to both avoid to multiply analyses and estimate effects taking into account all relations between variables, hypotheses were tested with structural equation modelling in which burnout, secondary traumatic stress and compassion satisfaction were regressed on self-efficacy and identification. In order to consider mediation, self-efficacy was regressed on identification and indirect effect from identification to dimensions of quality of life was estimated. Moreover, we added motivations to volunteering, gender (dummy coded, 0 = men), length of stay in volunteering and number of shifts per month as predictors in order to take into account their effects. All predictors except gender were centered at their grand mean. Maximum likelihood with bootstrap (n = 1000) estimation of standard error was used. First, in line with hypothesis 3, identification had a positive effect on self-efficacy ($B = 0.49$, $SE = 0.05$, $p < .001$, 95%CI [0.39, 0.60]) so that more identified volunteers perceived themselves to be more self-efficacious. Moreover, as indicated in table 2 and in figure 1, self-efficacy had a significant direct effect on both burnout and compassion satisfaction for which, according to hypothesis 1a and in partial agreement with 1b, volunteers who were high in self-efficacy reported high levels of compassion satisfaction and low levels of burnout. Contrary to hypothesis 1b, however, self-efficacy had no significant direct effect on secondary traumatic stress.

Table 2 and Figure 1 about here

Identification lost most of its effect when self-efficacy was added to the model. Indeed, the effect of identification on compassion satisfaction was mediated by self-efficacy, as expected by hypothesis 4a. The total effect of identification on compassion satisfaction, however, was significant (B = 5.46, SE = 1.63, p = .001, 95%CI [2.64, 8.82]). The direct effect of identification on burnout was also completely mediated by self-efficacy, as expected by hypothesis 4c. Contrary to hypothesis 4b, instead, self-efficacy did not mediate the relationship between identification and secondary traumatic stress. In this case, it is worth noting that the effect of identification, that was detected in zero-order correlation, become non-significant either as direct effect (table 2) and total effect (B = 1.80, SE = 1.22, p = .14, 95%CI [-0.64, 4.29]). Gender appeared to have a significant effect such that female volunteers reported higher scores (M = 52.31, SD = 9.39) than male volunteers (M = 48.04, SD = 10.12). In addition, motivations also appear to have a significant effect on secondary traumatic stress: the more volunteers placed importance on self-enhancement and social motivations the more they reported secondary traumatic stress; understanding motives, instead, were associated with reduced levels of secondary traumatic stress.

Additional analyses

We ran also a SEM without motivations as predictors of quality of life's dimensions. Results are reported in the bottom part of the Table 2. As one can see, results were identical except for the effect of identification on secondary traumatic stress that became clearly significant. This suggests that the effect of identification on secondary traumatic stress is partially accounted for by other motivational inputs such as the desire for understanding and self-enhancement that volunteering permits to satisfy.

Discussion

This work aimed to assess the role self-efficacy and group identification on the quality of life of volunteers who operate in the emergency medical services. We adopted the compassion satisfaction/fatigue framework (Stamm, 2010) and considered the quality of life as a mixture of both

negative (e.g., burnout and secondary traumatic stress) and positive (e.g., compassion satisfaction) outcomes. This study is novel given that, to the best of our knowledge, it is the first works to try to take into account the interactive role of self-efficacy and group identification on both the positive and negative dimension of the wellbeing of EMS volunteers who remain, unfortunately, a greatly under-investigated population.

The results are largely supportive of the social identity and social cure approach (Jetten et al., 2014), confirming that group membership may be transformed into a resource for improving well-being, and showing that group commitment plays an important role in the quality of life of EMS volunteers. According to the social identity approach and previous research (D. M. Haslam et al., 2006; Heath et al., 2017), group identification is positively linked to volunteers' self-efficacy so that more identified volunteers are also more confident about their ability to deliver care in emergency settings. This is in line with previous research within the social identity framework that shows that group membership, supplying the basis for social support and cooperation, could lead to improving individual and collective self-efficacy (Frisch, Häusser, van Dick, & Mojzisch, 2014; van Dick & Haslam, 2012).

Results, however, show also that group identification and self-efficacy had a different impact depending on the considered outcome. In terms of burnout, the effect of volunteer identification was completely accounted for by self-efficacy which, according to previous research (e.g., Consiglio et al., 2014), is confirmed to be one of the most predictive factors of burnout. Thus, it appears that, according to the social identity approach, group identification might increase the ability to cope with prolonged stress (i.e., burnout) by increasing volunteers' self-efficacy. This result can be explained in view of the fact that the emotional labour and workload that characterizes these volunteers call for specific relational coping strategies to face such emotional demands. Group membership makes volunteers proud of their role and the identification with the volunteer team acts as a motivating factor in increasing the perception of being able to make a difference, with positive consequences for wellbeing. This is in line with the triple-match principle (TMP) of De Jonge and Dormann (2006),

for which the resources are more likely to be protective if demands, resources and strain all match. When stressors, resources, and strains are qualitatively based on the same dimensions, their interactive effect is stronger. In this sense, the awareness of being an effective support for the patient, which is based on self-efficacy and volunteer identification, may mitigate the impact of emotional stressors, preventing the perception of depersonalization and emotional exhaustion that represent a potential strain for the 'helping/caregiving professions.'

The same pattern of effects observed for burnout was detected also for the positive outcome of compassion satisfaction. Again, volunteer identification was positively linked to self-efficacy that, in turn, was associated with an increased sense of compassion satisfaction. This is congruent with other studies (e.g., Prati, Pietrantoni, & Cicognani, 2010) that underlined that self-efficacy reduced the impact of stressful events on both the negative and positive dimensions of quality of life. In the case of compassion satisfaction, however, the total effect of identification was significant, suggesting that volunteer commitment has an influence on volunteers' perception of satisfaction in being part of the aid process. This suggests that a slightly different process affects compassion satisfaction with respect to burnout. Indeed, compassion satisfaction appears to be connected with the awareness of carrying out the activity in the appropriate manner but also by the feeling of being part of a group that is devoted to helping unhealthy people. These two paths may strengthen well-being and pleasure because the volunteer believes he or she makes a difference in delivering aid and support.

Interestingly, we found no effect of self-efficacy on secondary traumatic stress, while volunteer identification had a marginally significant association with secondary traumatic stress. It is worth noting that group identification tended to be *positively* rather than *negatively* associated with secondary traumatic stress when all other variables were controlled for. Given that this effect was close to the usual level of significance, and it was significant when other motivations were excluded from the analysis, we believe that the effect of group identification on secondary traumatic stress maintains some theoretical and practical interest. It suggests, indeed, that identification with a group can increase the salience and impact of traumatic events in EMS volunteers. This unexpected trend

may be interpreted based on social identity approach assuming that the more people link the self to their volunteer category the more they are sensitive to either directly experienced trauma or trauma experienced by others. Moreover, self-efficacy appears to have no role with respect to STS. This might be because we measured general (but linked to volunteer activities) self-efficacy and not trauma-related coping self-efficacy (e.g., Benight et al., 2015). It has been indeed shown that traumatic events require a specific ability to cope with particular psychological demands that trauma implies (Benight & Bandura, 2004; Cieslak, Benight, & Caden Lehman, 2008). Thus, general self-efficacy might be unhelpful in situations that are really beyond the people's control, such as traumatic event (i.e., sudden and extremely stressful events) which can induce a sense of powerlessness in the volunteers. This speculation is supported by the inspection of the effect of motivations. Firstly, the more volunteers embrace the motive of understanding (i.e., permitting new learning or using previously acquired knowledge), the less they experience STS. Thus, it appears that the expectation of learning new practical skills that would increase one's cultural background may overcome the feeling of powerlessness and lack of control in a traumatic event. More importantly, self-enhancement (i.e. a boost in self-esteem and feelings of usefulness) and social (i.e. increased opportunities to meet the expectations of relevant people) increase STS. It thus appears that the more people engage in EMS volunteering in order to improve self and social evaluations, the more they are sensitive to extremely stressful events. In other words, traumatic event can clash with the volunteers' need to feel able, capable, and skillful in supplying services to their community, to relevant others and to the unwell.

Practical implications

From a practical point of view, the present results confirm a substantial role of group membership in supporting quality of life of EMS rescuers: group identification is positively associated with self-efficacy and, in turn, with volunteers' quality of life. This suggests that volunteer associations should promote activities and training that enhance the sense of belonging to the volunteer group because the volunteer's sense of belonging might increase confidence and satisfaction in his/her own abilities and performance.

Results also confirm the difference between burnout, that is the consequence of a prolonged exposure to stressful events, and secondary traumatic stress that can arise from a single traumatic event or listening to the story of another person who suffered the event. This study showed that personal and social resources have a different impact on these two dimensions of the volunteers' quality of life. This suggests that volunteer associations should be careful to distinguish symptoms and risks coming from either prolonged or unexpected strong stresses in order to a) activate specific paths for recognizing, managing and treating these disorders, and b) implement specific trainings to allow volunteers to cope with different kinds of stressors. Importantly, this study suggests that volunteers' sense of mastering and technical and practical knowledge might be not enough to help them to manage sudden and traumatic calls. The lack of correlations between self-efficacy and secondary traumatic stress, indeed, suggests that volunteers' perception to be able to manage requests for intervention is unrelated to the reduction in thoughts and feelings about traumatic experiences. For this most acute syndrome, it seems that other type of resources must be activated. For example, the narrative approach and ways of generating meanings from the specific experience could be used (e.g., Killian, 2008; Neimeyer, 2004).

Moreover, in order to reduce the onset of burnout, our results suggest that a sense of identification with the volunteer group could be reinforced so that, according to the social identity approach (van Dick & Haslam, 2012), the group can be transformed into resources and people can feel they are efficacious both individually and as a group member as well. To connect an individual's stressful experiences to other group members as well as sharing experiences in the team is the prerequisite for the perception of the organizational support that other studies have found to be pivotal for volunteers (Moreno-Jiménez & Villodres, 2010). This could be reached through the increase of communication and sharing *within* the team, proposing debriefing moments after completing a task and eventually followed by psychological or counselling interventions delivered by specific professionals. Also, to highlight collective strategies used in the past to solve critical situations could be used as a strategy to increase feeling of belonging and closeness among volunteers.

Limitations

One limitation of this research concerns the cross-sectional design that does not allow us to infer causal relations. This makes it possible for other paths to explain our data. For example, we cannot exclude that self-efficacy was reduced in people with high burnout score. Similarly, it is possible that group identification mediates the effect of self-efficacy on quality of life rather than the opposite. There are, however, some theoretical reasons that make these possibilities unlikely to occur. Social cognitive theory (Bandura, 1997) assumes that self-efficacy determines various stress-related outcomes among which burnout. Accordingly, research shows that self-efficacy is a resource that helps to prevent the negative consequences of strain (Blecharz et al., 2014), job stress (Hahn, Binnewies, Sonnentag, & Mojza, 2011) and organizational changes (Jimmieson, Terry, & Callan, 2004). Importantly, experimental research shows that an increase in self-efficacy reduces job strain (Unsworth & Mason, 2012). Similarly, some longitudinal and field-experimental research show that group identification increases collective self-efficacy (e.g., Junker, van Dick, Avanzi, Häusser, & Mojzisch, 2018). Hence, although we cannot exclude it, theoretical and empirical works suggest that reverse causality is not so likely to have occurred in this research.

Secondly, the self-report outcomes could be affected by the common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Thirdly, other variables related to leadership and group functioning, such as climate, could be examined and inserted in future studies as a moderator of the studied relationships. Despite the well-known limitations of an observational study, we used a cross-section design because the investigated sample would not be easily enrolled in experimental as well as longitudinal research, and because our aim was primarily the observation of a still under-investigated population like EMS volunteers. Indeed, given the nature of this particular population that is based primarily on individual's motivation and will, the manipulation of group identification and self-efficacy would be, in our opinion, extremely difficult. Moreover, the limited time that volunteers can devote to volunteering activities makes this population hard to investigate with a longitudinal design (which would be in any case be observational in nature). Time constraints are

indeed recognised as one of the principal barriers to entering and remaining in volunteering (Gage & Thapa, 2012; Scott & Howlett, 2018; Southby, South, & Bagnall, 2019). For these reasons, we argue that the cross-sectional design is the research strategy that would maximise chances to enrol as many participants as possible, avoiding mortality, and then supplying more robust evidence that would help researchers to increase their knowledge of psychosocial process in EMS volunteers. In turn, this knowledge could have an important applicative and practical value. We would also like to specify that, in this paper, a model of relations is proposed between considered variables, a model whose results suggest is plausible. Nonetheless, further research is needed to examine the causal links among the considered variables.

Conclusion

The present work is one of the first attempts to take into account the relations between group identification, self-efficacy and quality of life in EMS volunteers. Given the extraordinarily important role of volunteering for the functioning of healthcare services and communities, we believe that volunteers' wellbeing and quality of life warrant close attention in the agenda of social, community and applied psychology. The present study underlines some important aspects that could be improved in order to increase volunteers' wellbeing but also emphasises problems and specific difficulties that we believe should be adequately taken into account by both the volunteer associations and the researchers.

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Table 1. Reliability and zero-order correlations and descriptive statistics of considered variables.

		1	2	3	4	5	6	7	8	9	10	11
1. CS		*.85*	-.51**	.19*	.66**	.50**	.36**	.48**	.24**	.41**	.49**	.53**
2. Burnout			*.63*	.17*	-.41**	-.28**	-.16*	-.34*	-.13	-.17*	-.27**	-.23**
3. STS				*.78*	.12	.20**	.23**	.16*	.28**	.29**	.16**	.31**
4. Self-efficacy					*.91*	.54**	.40**	.57**	.27**	.44**	.58**	.51**
5. Identification						*.92*	.24**	.59**	.10	.37**	.40**	.43**
6. Protection							*.82*	.42**	.65**	.56**	.51**	.71**
7. Values								*.78*	.32**	.59**	.69**	.59**
8. Career									*.80*	.53**	.49**	.56**
9. Social										*.81*	.68**	.64**
10. Understanding											*.77*	.67**
11. Self-enhancement												*.80*
	M	37.50	23.46	21.06	3.66	4.38	2.57	3.67	2.12	2.92	3.58	3.45
	SD	6.33	5.00	6.02	0.64	0.70	0.98	0.83	0.90	0.96	0.83	0.91

N = 203. CS = compassion satisfaction, STS = secondary traumatic stress. Cronbach's alpha on the diagonal. CS, burnout and STS are reported as raw scores.

Table 2. Direct and indirect effects of self-efficacy and volunteer identification on burnout, secondary traumatic stress and compassion satisfaction.

	Burnout			Secondary traumatic stress			Compassion satisfaction		
	B	*se*	95%CI	*B*	*se*	95%CI	*B*	*se*	95%CI
With motivations									
Self-efficacy	-5.19**	1.49	[-8.20, -2.39]	-0.92	1.33	[-3.50, 1.64]	7.32**	1.23	[4.74, 9.71]
Identification	-0.16	1.62	[-3.70, 2.67]	2.24^	1.21	[-0.15, 4.56]	1.90	1.56	[-0.71, 5.28]
Number of shifts	-0.59	0.37	[-1.28, 0.19]	-0.57	0.42	[-1.42, 0.28]	0.33	0.25	[-0.19, 0.82]
Length of stay	0.01	0.09	[-0.17, 0.17]	-0.08	0.09	[-0.24, 0.09]	0.04	0.07	[-0.10, 0.16]
Gender (0 = men)	0.14	1.31	[-2.52, 2.83]	3.76**	1.29	[1.19, 6.30]	0.32	1.09	[-1.83, 2.43]
Career	-0.81	0.98	[-2.83, 1.04]	1.69	1.11	[-0.52, 3.83]	-0.38	0.82	[-1.93, 1.32]
Protection	0.62	0.91	[-1.03, 2.48]	-0.16	0.95	[-1.97, 1.77]	-0.27	0.85	[-1.96, 1.38]
Values	-2.48*	1.22	[-4.83, -0.09]	-0.75	1.34	[-3.29, 1.94]	-0.32	1.03	[-2.35, 1.76]
Self-enhancement	0.01	1.22	[-2.45, 2.42]	2.56*	1.16	[0.29, 4.75]	2.71**	1.07	[0.71, 4.88]
Social	1.18	1.06	[-0.89, 3.41]	2.52**	0.96	[0.43, 4.19]	0.14	0.76	[-1.37, 1.64]
Understanding	0.09	1.38	[-2.61, 2.75]	-2.65*	1.33	[-5.22, -0.52]	0.48	1.12	[-1.66, 2.66]
Indirect effects									
Ident -> self-eff ->	-2.52**	0.78	[-4.16, -1.06]	-0.45	0.66	[-1.76, 0.78]	3.55**	0.67	[2.34, 4.89]
R^2	.19			.22			.48		
Without motivations									
Self-efficacy	-5.64**	1.27	[-8.08, -3.10]	0.29	1.35	[-2.21, 3.10]	8.72**	0.89	[6.85, 10.48]

Identification	-0.91	1.59	[-4.48, 1.71]	2.69**	1.03	[0.65, 4.79]	2.59	1.46	[0.13, 5.91]
Number of shifts	-0.53	0.38	[-1.25, 0.30]	-0.43	0.43	[-1.31, 0.46]	0.44	0.25	[-0.08, 0.94]
Length of stay	0.01	0.09	[-0.18, 0.18]	-0.07	0.09	[-0.25, 0.12]	0.02	0.07	[-0.11, 0.15]
Gender (0 = men)	0.09	1.31	[-2.72, 2.57]	3.57**	1.34	[0.93, 6.21]	0.40	1.05	[-1.61, 2.52]
Indirect effects									
Ident -> self-eff ->	-2.74**	0.70	[-4.25, -1.44]	0.14	0.67	[-1.11, 1.50]	4.24**	0.59	[3.15, 5.41]
R^2	.18			.09			.47		

^ $p = .063$; * $p < .05$; ** $p < .01$

Figure Legend

Figure 1. Standardized estimated coefficients and significance of predictors of quality of life dimensions.