

# Mental health and cultural religious coping of disabled veterans' in Sri Lanka

Piyanjali de Zoysa, PhD<sup>1</sup> and Thulitha Wickrama, PhD<sup>2</sup>

## Abstract

This study examined the prevalence of post traumatic stress disorder (PTSD) and Center for Epidemiological Studies Depression (CES-D) depressive symptoms, their association with previously untested supportive resources such as Buddhist religious activities, Buddhist bodhipuja rituals and horoscope readings for 45 recently wounded veterans in Sri Lanka. The results revealed an 85.4% prevalence rate of clinical levels of CES-D depression and a 42.2% prevalence rate of clinical levels of PTSD. The results of this study provide unique evidence for the significant role of Buddhist religious activities, the cultural activity of horoscope reading, and the support of family and friends in reducing the depressive symptoms in disabled veterans. Moreover, with the present study we were able to conclude that the support of family and friends reduced both perceived depressive symptoms and the PTSD symptoms of wounded veterans.

## Introduction

The recently concluded ethnic conflict in Sri Lanka took thousands of lives, displaced thousands of families and severely damaged the economy and infrastructure. The exposure to war-related trauma has led to mental disorders among both Sri Lankan civilians and combatants alike (Miller & Rasmussen, 2010). The impact of such trauma exposure increases the impact of secondary stressors such as family conflicts and negative events, leading to increased mental health problems (Wickrama & Wickrama, 2008; 2010). While the immediate impact of war exposure on mental health can be severe for a significant portion of victims, mental health problems can persist for several years. For instance, nearly a decade after experiencing war, a group of combatants and civilians showed a 10% prevalence of depression (Basoglu et al., 2005).

Trauma research has well documented the influence of psychological and social resources to help in reestablishing feelings of self esteem, a sense of control and giving social support for the mental health of combatants (Aldwin et al., 1994; Basoglu et al., 2005; Desmond & MacLachlan, 2006). Studies have also shown that while military service exposes individuals to war trauma, it also has a positive influence on personal resources such as mastery and coping skills, which have been shown to moderate the negative influence of trauma on mental health (Aldwin et al., 1994). Conversely, the loss of a sense of control has been shown to increase the vulnerability to mental disorders such as PTSD and depression (Basoglu et al., 2005). While there is considerable research on the ability to cope following trauma and stress, less is known about the role of specific cultural and religious strategies available for trauma victims in traditional societies. Moreover, there is a significant dearth in knowledge of indigenous healing techniques that may have the ability to reduce post traumatic mental health problems.

Using a sample of disabled veterans in Sri Lanka (N=45), the present study examines the prevalence of mental illness alongside the practice of cultural and religious methods allowing the veterans to overcome the emotional trauma. In particular, the unique influences of Buddhist religious practice, Buddhist religious rituals, Sri Lankan cultural practices and the support of family and friends on PTSD and the depressive symptoms of physically disabled (wounded) veterans are examined.

## Religiosity as a Coping Strategy

Among war veterans, after controlling for social support and the personal interpretation of their experiences, religious practices have been shown to have a significant influence on their mental health, particularly for PTSD symptoms (Aflaksier & Coleman, 2009). Hence, religiosity may serve as an effective coping resource among those exposed to war-related trauma (Drescher et al., 2007). Religiosity, broadly defined, involves religious beliefs, faith, spiritual practices and religious participation. An increase in religious participation, such as prayer, has been associated with exposure to war trauma (Ai et al., 2005) and a belief in god has been shown to be negatively associated with depression (Naelys et al., 2009). Also veteran survivor guilt, which is known to contribute to the severity of PTSD and depressive symptoms, has been shown to be relieved to some extent by religious faith (Khouzam & Kissmeyer, 1997). In contrast, weakened religious faith has been associated with the increased use of mental health services (Fontana & Rosenheck, 2004).

**Buddhist Beliefs.** Religious beliefs can give meaningful interpretations to stressful events. Exline et al. (2005) showed that 80% of traumatized individuals used religion to give meaning to their negative experiences, with an eventual increase in positive mood. The Buddhist concepts of impermanence (Anitta in Pali) and the reaping

of the consequences of one's own previous actions (Karma in Pali), even those of previous lives, provides an avenue for contextualizing personal war-related experiences (De Zoysa & Weerasinghe, 2000). It has been shown that the greater the trauma, the greater it is associated with a belief in Karma (Davidson et al., 2004). Some studies have shown that a belief in Karma is significantly more prevalent among those with greater trauma exposure than for those with less exposure (Davidson et al., 1994). However, findings on Karma as a coping strategy are mixed; some studies have shown that a belief in Karma is associated with poorer health, such as that among Sri Lankan Buddhists exposed to the tsunami (Levi et al., 2009). These findings warrant further investigation as to the role of the belief in Karma as a coping mechanism. The present study indirectly captures these beliefs through reports of religiosity.

**Buddhist Religious Participation.** Buddhist religious participation can be either through mental exercises such as meditation or through other practices including Bodhipuja, prayers, sermons, and chanting.

**Meditation.** Meditation has shown to decrease PTSD among youth exposed to war trauma (Gordon et al., 2004). Among Vietnam war veterans, transcendental meditation has been shown to significantly reduce the severity of their PTSD and depressive symptoms (Hankey, 2007). Increasingly, mental health programs have started to recognize the importance of these spiritual practices and have adapted these to suit the mental health needs among various client populations (i.e., among substance abusers, among those with unexplained medical symptoms including depression; De Zoysa, in press; Simpson et al., 2007; Somasundaram, 2002).

Some Buddhist practices are similar to Western psychotherapeutic methods, such as the cognitive behavioural methods that have been shown to be effective in reducing the psychological ramifications of trauma (Fernando, 2004). For instance, the Buddhist practice of identifying maladaptive thoughts and consciously modifying them to reflect reality (Bodhi, 2000) share similarities with the second wave of cognitive behavioral therapy (CBT), which emphasizes the importance of maladaptive information processing in the production of a mental illness (Beck, 1976).

Moreover, the Buddhist practice of mindfulness meditation has had an influence on the third wave of CBT with the advent of Acceptance and Commitment Therapy (Hayes et al., 1999), Dialectical Behavior Therapy (Dimeff & Linehan, 2001) and Mindfulness-Based Cognitive Therapy (Segal et al., 2002) which draws heavily from the Buddhist practice of mindfulness meditation. In these therapies, the use of this type of meditation has at its ultimate aim the alleviation of psychological distress and/or promotion of psychological well-being (Kabat-Zinn, 1990; Segal et al., 2002). CBT's third wave of therapy aims to enhance

attention towards the current experience, increase receptive awareness and attention, disengage individuals from automatic thoughts, and assist in acceptance of the current situation whilst taking mindful action towards the desired change as appropriate (Segal et al., 2002).

While these specific therapies are not examined in the present study, they attest to the similarity between Buddhist meditation and some psychotherapies. The present study examines the influence of these meditation techniques through individual reports of participation in Buddhist religious activities, most of which have meditating components.

**Buddhist Rituals.** Bodhipuja is a Buddhist ritual - a religious activity often conducted for the emotional and devotional needs of an individual in association with a stressful event. Bhodipuja has been shown to ease the transition of war veterans into civilian life and has helped to give them a sense of physical and emotional healing (De Silva, 2006). A study of a tsunami-exposed Buddhist sample in Sri Lanka found that 40% of the participants found it helpful to engage in Bodhipuja as a coping strategy for dealing with their trauma experience (Hollifield et al., 2008). Building on these previous studies, the present study will examine if this practice is also useful in decreasing mental illness resulting from war-related trauma.

**Cultural Practices.** A horoscope, widely used and believed in the study population, is an astrologically based document written specifically for an individual that forecasts his or her life experiences. A horoscope may be interpreted by an astrologer to indicate that the war exposure was pre-determined, unavoidable, and out of one's control. In this regard, the belief in one's horoscope allows an individual to attribute this negative experience and the associated symptoms to one's 'bad period' in life. As, according to astrology, these 'bad periods' come and go, the believer is given hope that this 'bad' traumatic period will pass and better times will come (Tribe, 2007). Moreover, horoscope readers also provide remedies for these 'bad periods' (e.g. wearing gem stone rings) that are believed to protect the individual during that specific time. Thus this belief in a horoscope may provide greater inner strength to persevere through a difficult life period. The present study will examine the unique effects of this coping strategy in reducing mental illness in a sample of war trauma exposed veterans.

**Social Support and Religiosity.** Gaining social support has been shown to decrease depression among veterans (Desmond & MacLachlan, 2006). Religiosity has been shown to both directly and indirectly (by improving social support) affect mental health (Koenig, 2001). For instance, while religiosity has shown an independent influence on depressive symptoms it has also been linked to gaining social support (Bosworth et al., 2003). Lack of social support, a younger age, and lower socio-economic

status (SES) have all been linked to greater risk of PTSD (Brewin et al., 2000). Greater social support from family is associated with the greater use of coping mechanisms via a greater perceived hope among veterans (Irving et al., 1997). Religiosity and cultural beliefs appear to have an influence on post trauma depressive symptoms independent of the social support from the family (Bosworth et al., 2003). Thus, while the beneficial effects of social support in reducing post traumatic mental illness are well known, the present study will examine the unique influence of Buddhist religiosity and cultural practices as strategies over and above the influence of social support.

### Methods

**Sample, Sampling and Data Collection Procedure.** Sri Lanka (formerly known as Ceylon) is an island of 66,000 square kilometers lying off the south-eastern tip of India. No fewer than ten separate ethnic groups, of varying sizes, can be distinguished in present day Sri Lanka. This includes the Veddhas, a small group of primitive tribesmen who have preserved their own distinctive social organization and technology and various immigrant groups (e.g., Mongoloids, Europeans, Indo-Aryans) who have arrived at different times throughout its history. However, the two principal ethnic groups in the country are the Sinhalese, who tend to be Buddhist and constitute approximately 74% of the population, and the Tamil minority who are largely Hindu and reside in the North and East of the country, forming approximately 18% of the population. Sinhala is the official language in the country, but Tamil is also a national language. English is spoken by about 10% of the population and is commonly used for official purposes. Sri Lanka has a mixture of religions with Buddhist (68%), Hindu (15%), Christian (8%) and Muslim (8%).

**Sample Demographics.** The present study was conducted among 45 disabled male soldiers of the Sri Lankan Army infantry wounded within a few years of data collection. They were residing in a facility for disabled soldiers. All 45 participants indicated that they participate in Buddhist religious activities. The average age of the sample was 26.48 (range from 18 to 42), while the average education level was 10th grade (64%). 66% of participants were unmarried.

Veterans who were on treatment for active symptoms of a mental illness were not included in the study, nor were those veterans who could not write (due to a hand/wrist related disability). The survey questionnaire was administered to the group by the principal investigator. Multiple regression analysis using SPSS 18.0 was used to investigate the influence of coping strategies on the mental health of wounded veterans.

### Measures

**Control Variables.** *Disability* was assessed by calculating the mean composite of the three item Sheehan Disability Inventory (Sheehan, 1983), measuring the severity of disability at home, at work, and socially. Each item was scored on a 10 point Likert type scale ranging from 0 (not at all impaired) to 10 (very severely impaired). Age was assessed by asking the age of the participant veteran. Education was assessed by asking the highest level of schooling they completed on a Likert type scale ranging from 1 (no school at all) to 6 (university education).

### Coping Strategies

*Family support, Buddhist religious activities, Buddhist bodhipuja rituals, and horoscope readings each served as single item indicators of psychosocial, religious, and cultural coping strategies for veterans.* Previous use of the translated version of these items in mental health studies involving Sinhalese Buddhist samples exposed to trauma indicated that the translated items maintained adequate psychometric properties (Wickrama & Wickrama, 2008; 2010).

*Family Support* was assessed using the single item "how much did family member support help you recover from post war stressful feelings and symptoms." The respondents indicated the degree of helpfulness ranging from 0 (not at all) to 3 (very helpful). This measure was adapted from Portes & Rumbaut (2001) that assessed mutual support and cohesion among family members. *Buddhist Religious Activities* were assessed using the single item "how much did religious activities help you recover from post war stressful feelings and symptoms." The respondents indicated the helpfulness ranging from 0 (not at all) to 3 (very helpful). *Buddhist Bodhipuja Rituals* were assessed using the single item "how much did Bodhipuja activities help you recover from post war stressful feelings and symptoms." The respondents indicated the helpfulness ranging from 0 (not at all) to 3 (very helpful). *Horoscope Readings* was assessed using the single item "how much did horoscope readings help you recover from post war stressful feelings and symptoms." The respondents indicated the helpfulness ranging from 0 (not at all) to 3 (very helpful).

To compute the subsample of non-practising Buddhists, the question item was then asked "How often do you practice your religion". The respondents indicated their frequency of practice on a range from 1 (never) to 5 (daily). Those that answered 1 and 2 were used to compute the non-practising Buddhists subsample, while to compute the practising Buddhists subsample, those that answered 3, 4, and 5 were used.

### Mental Health

*Depressive Symptoms* was assessed using the 20 item Center for Epidemiological Studies Depression (CES-D)

scale (Radloff, 1977). The respondents indicated their frequency of experiencing depressive feelings (1 = rare to 4 = most of the time) to items such as: “could not shake off the blues even with help from my family and friends,” “trouble keeping my mind on what I was doing,” “everything I did was an effort,” “my life had been a failure,” and “fearful.” Summed scores for the composite measure of a participant could range between 0 and 60. Previous use of the English version of the CES-D in various studies indicated that the measure possesses good psychometric properties (Wickrama & Bryant, 2003). The use of translated versions of the CES-D in cross-cultural mental health studies including Sinhalese Buddhist samples exposed to trauma also indicated that translated forms maintain adequate psychometric properties (Noh et al., 2007; Wickrama & Wickrama, 2010). The internal consistencies for the depressive symptoms measures displayed an acceptable level in the present sample ( $\alpha = .73$ ).

*Post Traumatic Stress Disorder (PTSD).* Posttraumatic stress disorder (PTSD) symptom levels were assessed using 20 DSM-IV diagnostic interview items (American Psychiatric Association, 1994). This PTSD measure, assessing symptom severity for a specific traumatic event, consists of items composed of three sub-scales: re-experiencing, avoidance and hyper-arousal. They have been used in different ethnic groups, including Sri Lankan, Southeast Asian, West Asian, African, Balkan, and Middle Eastern groups (Wickrama & Kaspar, 2006; Kaspar, 2002). The items include PTSD symptoms specified in the DSM-IV, and were developed based on English versions of measures used in a number of published studies and have been shown to have good psychometric properties for screening PTSD (e.g., Kessler et al., 1995; Turner & Gil, 2002). Clinical levels of PTSD were assessed using the frequency of veterans experiencing symptom categories as laid out in the DSM-IV. This measure displayed an acceptable level of internal consistency in the present study sample ( $\alpha = .71$ ).

The measures of depressive symptoms and PTSD used in the present study were translated from English to Sinhalese in collaboration with an experienced local mental health

professional and after pilot testing on five village respondents, the translated versions underwent the appropriate item revisions to aid understanding and to improve clarity (Marin, 1992; Wickrama & Wickrama, 2008).

Results

*Mental Illness Prevalence.* The prevalence rate of clinical levels of CES-D depression is 85.4% whilst the prevalence rate of clinical levels of PTSD (DSM-IV, 1994) is 42.2% in this sample.

*Use of Coping Strategies.* A wide range of coping resources were used to deal with the veterans’ post-war experiences: Thirty-three percent (33%) indicated they used self-confidence to deal with their problems post-war; with a similar percentage (31%) indicating they used Buddhist religiosity. Twenty-five percent (25%) reported religious participation. Furthermore, 33% said their self-confidence was quite a lot of help, 24% said their family were quite a lot of help, 18% said the Buddhist ritual of Bodhipuja was quite a lot of help, while 36% also said Western medical hospitals were quite a lot of help. Table 1 details the means, standard deviations, and ranges in these and other coping strategies, while Table 2 details the bivariate correlations between the study measures.

Measures	M	SD	Range (min,max)	A
Age	26.48	6.56	18, 42	
Education	3.93	.61	3, 6	
Marital Status	.28	.44	0, 1	
Family Social Support	2.19	.64	0, 3	
Buddhist Religious Activities	1.44	.38	0, 2	
Buddhist Bodhipuja Ritual	1.90	.72	0, 3	
Horoscope Readings	.50	.48	0, 2	
Sheehan Disability Scale	11.15	5.08	0, 28	
PTSD	28.55	6.05	19, 41	.71
CES-D	27.40	7.58	12, 44	.73

Table 1. Characteristics of Measures of Study Sample.

	1	2	3	4	5	6	7	8	9
1. Depression	1								
2. PTSD	.41**	1							
3. Age	-.13	-.19	1						
4. Education	-.09	-.07	.13	1					
5. Sheehan Disability	.14	.41**	-.25	-.09	1				
6. Family Support	.37**	-.48**	-.04	-.01	-.10	1			
7. Religious Activities	.29*	-.12	.21	-.06	-.12	.03	1		
8. Bodhipuja Rituals	.20	-.14	.21	-.16	-.04	.29*	.09	1	
9. Horoscope Readngs	.14	.01	.16	.15	.03	.00	-.06	-.24	1

\*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

Table 2. Correlations Among Study Variables.



Table 3 indicates that the control variables age, education, and disability were not significantly associated with depressive symptoms ( $\beta = -.08, p > .05$ ;  $\beta = -.05, p > .05$ ;  $\beta = .11, p > .05$ , respectively). Control variables only explained 2.8% of variance in depressive symptoms of the total sample. Entering the coping strategies in the regression analysis indicated that the coping strategies of family support, Buddhist religious activities, horoscope readings, and the Buddhist Bodhipuja ritual each were significantly associated with depressive symptoms ( $\beta = -.48, p < .0001$ ;  $\beta = -.28, p < .05$ ;  $\beta = -.31, p < .05$ ;  $\beta = .44, p < .01$ , respectively), after controlling for demographic characteristics (age, education, disability). The model including coping strategies explained 43.3% of the total variance in depressive symptoms. Unlike these depressive symptoms, the control variable disability was significantly associated with PTSD among veterans ( $\beta = .32, p < .01$ ), while age and education were not significantly associated with PTSD ( $\beta = -.10, p > .05$ ;  $\beta = -.02, p > .05$ ). However, when testing the same coping strategies on PTSD, only support from family was significantly associated with PTSD symptoms ( $\beta = -.47, p < .01$ ), while Buddhist religious activities, the Buddhist Bodhipuja Ritual and the horoscope readings were not significantly associated with PTSD in the total sample ( $\beta = -.05, p > .05$ ;  $\beta = .04, p > .05$ ; and  $\beta = .01, p > .05$ , respectively). While the control variables explained 17.5% of the variance in PTSD symptoms, the full model including coping strategies explained 38.9% of the variance in PTSD symptoms.

	Depressive Symptoms	PTSD		
	Model 1	Model 2	Model 1	Model 2
<b>Controls</b>				
Age	-.08	-.10	-.10	-.13
Education	-.05	-.08	-.02	-.05
Disability	.11	.07	.38**	.32*
<b>Coping Strategies</b>				
Family Social Support		-.48***		-.47**
Buddhist Religious Activities		-.28*		-.05
Buddhist Bodhipuja Ritual		.44**		.04
Horoscope Readings	2.8%	-.31*		.01
<b>Variance Explained</b>	11.15	43.3%	17.5%	38.9%

Note: Only significant coping strategies shown. + $P < .10$ , \* $P < .05$ , \*\* $P < .01$

Table 3. Regression for depression and PTSD (standardized betas) using the full sample (n=44).

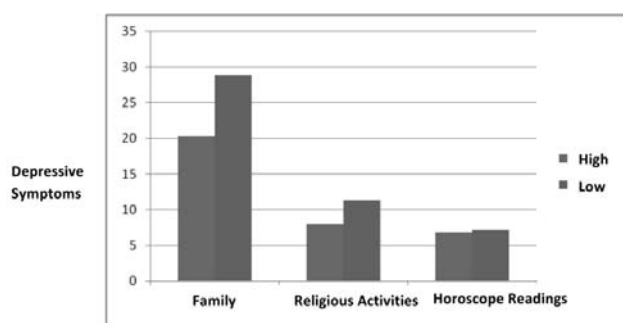
Table 4 examines the associations between coping strategies and the depressive symptoms separately on practising versus non-practising Buddhists of the all Buddhist study sample. In model 1, control variables age, education, and disability were not significantly associated with the depressive symptoms of practising Buddhists (symptoms ( $\beta = -.13, p > .05$ ;  $\beta = .03, p > .05$ ; and  $\beta = -.04, p > .05$ , respectively) and only contributed to 1.8% of the depressive symptoms variance. In model 2, the coping strategies of family social support, Buddhist religious activities and Buddhist Bodhipuja ritual were significantly associated whilst the horoscope readings did not significantly associate with depressive symptoms amongst practising Buddhists ( $\beta = -.41, p < .0001$ ;  $\beta = -.37, p < .05$ ;  $\beta = -.47, p < .05$ , and  $\beta = -.13, p > .05$ , respectively). Model 2 explains 36.9% of the variance in depressive symptoms of the practising Buddhists subsample. Similar to the practising Buddhists subsample, control variables for age, education, and disability did not significantly associate with depressive symptoms of the non-practising Buddhists subsample ( $\beta = .24, p > .05$ ;  $\beta = -.44, p > .05$ ; and  $\beta = .21, p > .05$ , respectively). Contrary to the results with the practising Buddhists, the coping strategies of Buddhist religious activities and the Buddhist Bodhipuja ritual did not significantly associate with depressive symptoms of non-practising Buddhists ( $\beta = -.23, p > .05$ ;  $\beta = .13, p > .05$ , respectively). However, family social support and the unique horoscope readings were significantly associated with depressive symptoms for non-practising Buddhists ( $\beta = -.59, p < .05$  and  $\beta = .90, p < .01$ , respectively). Moreover, these two coping strategies by non-practising Buddhists explains 95.9% of their variance in the expressed depressive symptoms.

	Practising (n=32)		Non-Practising (n=12)	
	Model 1	Model 2	Model 1	Model 2
<b>Controls</b>				
Age	-.13	-.16	.24	.22
Education	.03	.13	-.44	.15
Disability	-.04	-.08	.21	.13
<b>Coping Strategies</b>				
Family Social Support		-.41*		-.59*
Buddhist Religious Activities		-.37*		-.23
Buddhist Bodhipuja Ritual		.47*		.13
Horoscope Readings		-.13		-.90**
<b>Variance Explained</b>	1.8%	36.9%	22.2%	95.9%

Note: Only significant coping strategies shown. + $P < .10$ , \* $P < .05$ , \*\* $P < .01$

Table 4. Regression for depression (standardized betas); practising vs non-practising Buddhists.

As depicted in Figure 1, significant mean differences were found in depressive symptoms for low versus high family support and religiosity coping strategies. This figure indicates that those with greater family support and greater Buddhist religious activities are associated with significantly lower depressive symptoms than those with lesser family support and lesser Buddhist religious activities. These findings are consistent with the regression results showing lower depressive symptoms with greater family support and greater Buddhist religious activities in the full sample. There were lower depressive symptoms among those with greater family support than in either of the Buddhist religious activity subsamples. These results are also consistent with the stronger negative association between Buddhist religious activities and the depressive symptoms of practising Buddhists (those with a higher Buddhist religious activity).



Note: Significant difference in mean depression for family/friends support and religiosity coping ( $p < .05$ ).

Figure 1. Difference in means between low and high coping strategy groups for CESD

## Discussion

The present study investigates the association between previously untested coping strategies such as Buddhist religious activities and the cultural practice of horoscope readings with mental health problems of veterans. The results indicate that Buddhist religious activities and horoscope reading are negatively associated with depressive symptoms while the more traditional coping strategy of family support negatively associates with both depressive symptoms and PTSD symptoms of disabled veterans. Although the prevalent rates of depression and PTSD remain high, perceptions by the participants that Buddhist religious activities, horoscope readings, and family support helped cope with mental illness are negatively associated with their depressive and PTSD symptoms. This association is more pronounced among veterans who practice Buddhist religious activities compared with those who do not practice Buddhist religious activities. Among a sample with significant mental health problems, these findings provide evidence for the joint beneficial influence of beliefs and practice on mental health problems (statistical interaction). Moreover, the analysis between the practising Buddhists versus

non-practising Buddhist subsamples provides evidence for joint beneficial influence between Buddhist religious practice and the belief in horoscope interpretation on mental health problems. According to the results, participants' perceptions that horoscope readings helped cope with mental illness was negatively associated with depressive symptoms among veterans who did not practice Buddhist religious activities. In fact, horoscope readings and family support contributed to 95.9% of the variance in depressive symptoms among non-practising Buddhists. The present study also re-affirms the previous finding that family support negatively associates with mental illness among veterans. However with the present evidence we are able to infer the role of an association of family support with both the depressive and the PTSD symptoms of wounded veterans.

Buddhist ritualistic practice of Bodhipuja was shown to be positively associated with depressive symptoms. Thus, Bodhipuja practice is not consistent with the negative association with depressive symptoms as shown in other coping strategies. While previous literature indicates that participating in Bodhipuja rituals is associated with feelings of easing back into life and the giving of a sense of healing after trauma, the present study indicates this activity may not serve as a coping strategy but may in fact increase depressive symptoms.

In a familistic and collectivistic society such as occurs in Sri Lanka, individual forms of trauma psychotherapy that disconnects an individual from a group might be less effective and may even exacerbate the symptoms (Fernando, 2007). Non-Western methods of therapy particular to a given culture may be used to heal the symptoms of an illness, including symptoms uniquely expressed in a given cultural context. Thus, to avoid the problem of disconcerting people and possibly exacerbating their symptoms, and to increase the chance of healing, culturally compatible methods, imbedded within an individual's social ecology should be used (Fernando, 2004). In fact, non-Western techniques such as Buddhist mindful meditation have been increasingly incorporated into Western therapy, particularly in the third wave of cognitive behavioral therapies of ACT, DBT and MBCT [define abbreviations] and these have been shown to be effective in reducing post traumatic illness symptoms (Follette et al., 2006).

Despite the high percentage of impairment in the sample, the perceived improvement in mental health suggest that programs incorporating Buddhist meditation techniques and other Buddhist religious activities may be an effective coping strategy for wounded veterans, especially in those who have positive beliefs about Buddhist religious activities. Moreover, wounded veterans who desire to undertake the cultural practice of horoscope readings may also experience mental health benefits because the positive perception of horoscope reading was negatively

associated with their actual depressive symptoms. Programs in Sri Lanka addressing the trauma of war-affected Tamil communities in Jaffna already use yoga methods, traditional forms of drama, and Tamil terminology to describe post traumatic emotions and these programs have yielded a favourable outcome (Somasundaram & Jamunanatha, 2002).

Migration and urbanization has somewhat affected the traditional extended family system that formerly was common in Sri Lanka. Nuclear families are far more frequent now, though more so in urban than in rural areas. The present research indicates that the existence of family support negatively associates with both depressive and PTSD symptoms of the participants. Hence, an effort to improve the family support received by disabled veterans may be beneficial in improving their mental health. The participants in the present study were living in a residential facility for the disabled, with adequate facilities for leisure, exercise and vocational rehabilitation. The nature of their injuries for some of these veterans made it difficult for them to be cared for in their homes (such as spinal cord injuries or above-the-knee amputations of both legs), especially as many of them were from lower socio-economic groups and could not afford special facilities. Hence they would need to remain at the facility. On the other hand, there were also veterans that had disabilities that could be cared for at home (such as an amputation of one leg). In light of the present research findings, it is important that such veterans be cared for by their family or have an opportunity for greater positive interactions with their family and hence obtain the mental health benefit of family support. However, it should also be cautioned that being resident at a rehabilitation facility may also have its benefits such as solidarity and companionship with fellow veterans (Armstrong, Best & Domenici, 2006). Removal of these important contributors to mental health, while increasing family contact, may have other negative repercussions. Hence, future research may need to study the impact of these diverse variables on the mental health of disabled veterans.

There are several limitations of this research. First and foremost, the small sample size and the fact that the participants were restricted to disabled soldiers. Hence the general applicability and the statistical power of the research were limited. Future research could investigate samples more representative of veterans and employ a larger sample size. In respect of the measures investigated in this study, only two measures of mental illness were explored – that of depression and PTSD. Future research may need to explore other types of psychological difficulties such as anger and chronic pain. Further, in our study,

religiosity was assessed by the subjects' participation in Buddhist religious activities or the involvement in religious rituals such as Bodhipuja. However, religiosity is a complex multi-faceted concept so it would be important that other aspects of religiosity be assessed in future studies, along with its related term spirituality, which denotes a more inner seeking as opposed to the outward aspects indicated by religiosity (Neff, 2006). Despite the multi-faceted nature of religiosity, we may be able to conclude that the religious activities of participants who all identified themselves as Buddhists, would also practice Buddhist religious activities if they could claim to be practising-Buddhists. However, future studies should investigate specific religious activities of participants in greater detail, so there may not be ambiguity as to whether those identifying themselves as Buddhists and stating they are practising-Buddhists, actually did practice religious activities considered to be of the Buddhist religion (e.g. Buddhist meditation). Importantly, the measures that were used, although translated into Sinhalese and used in other cross-cultural research have not been validated in Sri Lanka. As psychology is still in its infancy in Sri Lanka (De Zoysa & Ismail, 2001) there is a dearth of culturally validated psychometric tools. Hence, at the time of this study, validated instruments to assess concepts studied in this research were not available in the country. Future research would need to use instruments that are validated in the Sri Lankan culture if it were to yield more representative results. Future studies would also benefit from expanded Likert-type scales that allow the capture of a greater variation in critical variables of interest. A follow-up study with this sample will allow us to examine predictors of change in mental illness among veterans. In the future, this study could also be repeated with a less impaired sample to test the model further.

Research studies on Sri Lankan combatants are scarce, despite Sri Lanka's recently ended decades long ethnic conflict. Studies on disabled veterans in Sri Lanka are unknown, and in other nations, rare. Despite the limitations of this albeit preliminary study, it does offer an important insight into psychological functions and the associations with the unique religious and cultural coping strategies used by a population of wounded veterans to improve their perceived mental health.

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*Authors' affiliations: <sup>1</sup>University of Colombo, Sri Lanka, <sup>2</sup>Auburn University, Auburn, AL  
Corresponding Author: Assist Prof. Piyanjali de Zoysa, Dept Human Development and Family Studies, Auburn University, Auburn, AL  
Email: tzw0003@auburn.edu*

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