Are Tomorrow's Teachers Ready to Save Lives in Cases of Emergency?

Yarının Öğretmenleri Acil Durumda Hayat Kurtarmaya Hazır mı?

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Abstract. It is beyond dispute that immediate and proper first-aid in cases of emergency plays a vital role in saving lives. At schools, teachers happen to be the first witnesses to sudden injuries and illnesses and are expected to confidently and efficiently respond to such cases of emergency to preserve students' health. Therefore, whether teachers believe in themselves that they can implement correct first aid measures is quite critical. Therefore, through utilizing a new measure (The First Aid Self- Efficacy Scale), the present study intends to (1) assess tomorrow's teachers' first aid self-efficacy levels, (2) to identify whether significant differences exists among participants who received different types of first-aid trainings (1: no training, 2: course in the elementary school curriculum, 3: driving course, 4: voluntary professional training) in terms of their efficacy beliefs, and (3) to investigate the effect of gender on teacher candidates' first aid self-efficacy levels. To address the research questions, a paired t-test and two one-way MANOVAs were conducted, and descriptive statistics have been provided. The results reveal that tomorrow's teachers failed to believe in themselves especially when complex first aid measures are needed. Moreover, those who voluntarily attended first aid training programs were found to be significantly more self-efficacious. Male participants were discovered to feel more competent to initiate first aid interventions in case of sudden injuries and illnesses. To overcome the evident hesitancy to step into action in cases of emergency, more systematic and meticulous first aid training needs to be embedded in educational programs, particularly teacher education programs.

Keywords: Health Education, First-Aid, Social Cognitive Theory, Health Protective Behavior

Öz. Acil durumlarda ivedi ve doğru ilk yardım desteğinin hayat kurtarmadaki önemi tartışmasızdır. Okullarda ani gelişen yaralanma ve hastalıklara şahit olan öğretmenlerden öğrencilerin sağlığını korumaları ve bunu yaparken de etkin ve kendinden emin olarak harekete geçmeleri beklenmektedir. Bu nedenle öğretmenlerin kendilerine bu konuda ne kadar güvendikleri uygun ilk yardım tekniklerini uygulayabilmeleri açısından oldukça önemlidir. Yeni bir ölçme aracını kullanarak (İlk Yardım Öz-Yeterlik Ölçeği) bu çalışmanın amacı (1) yarının öğretmenlerinin ilk yardım öz-yeterliklerini ölçmek, (2) alınan ilk yardım eğitim türlerinin arasında öz-yeterlik açısından fark olup olmadığını görmek, (1: eğitimsiz, 2: ilköğretim programındaki ilk yardım dersleri, 3: direksiyon dersleri, 4: gönüllü olarak alınan profesyonel eğitim), ve (3) cinsiyetin öğretmen adaylarının ilk yardım öz-yeterlik algılarındaki etkisini belirlemektir. Bu araştırma sorularına yanıt bulmak için bir ilişkili ölçümler t-testi ve iki Tek Yönlü Varyans Analizi kullanılmış ve betimsel istatistikler sunulmuştur. Sonuçlar öğretmen adaylarının özellikle karmaşık ilk yardım gerektiren durumlarda bilgi ve becerilerine güvenmediklerini ortaya koymuştur. Öte yandan gönüllü olarak ilk yardım eğitimi alan öğretmen adaylarının diğer eğitimlerden geçen katılımcılara göre anlamlı olarak daha yüksek ilk yardım öz-yeterlik inançlarına sahip oldukları görülmüştür. Buna ek olarak erkek katılımcıların ani gelişen yaralanma ve hastalık durumlarındaki ilk yardım öz-yeterliklerinin kadınlara kıyasla daha yüksek olduğu bulunmuştur. Bulgularla desteklenen bu çalışma, acil durumlarda harekete geçmedeki çekimserliğin üstesinden gelmenin yolunun öğretmen adaylarına özellikle öğretmen yetiştirme programlarında planlı ve kapsamlı ilk yardım eğitimi verilmesinin gerekliliği gözler önüne koyulmuştur.

Anahtar Sözcükler: Sağlık Eğitimi, İlk Yardım, Sosyal Bilişsel Teori, Sağlığı Koruyucu Davranışlar

INTRODUCTION

Among all individuals, children are more prone to risks as a result of higher curiosity and physical activity levels, as well as lack of self-protection and danger awareness (Galal, 1999). Each year, every one out of ten children is reported to be admitted to health care service providers for accident-related injuries (Romer & Manciaux, 1991) and accidents are cited among the leading causes of death for young and school-age children (Erkan & Goz, 2006; Wei et al., 2013).

Today it is far from negligible that in cases of emergency, immediate and proper bystander response plays a vital role (Anderson & Gaetz, 2008) and when accidents are encountered at schools, teachers inevitably become the primary source of life-supporting first aid. Therefore, teachers' competence in first aid is of special importance since when timely and correctly applied, first-aid undoubtedly helps preserve lives; yet, when unconsciously initiated, it may compromise the casualty's health, lead to disabilities or even to loss of life.

At another end, apart from the knowledge of correct first aid procedures to be applied, the extent to which the individuals feel confident enough to translate this knowledge into practice and to initiate immediate action has a special meaning for preserving lives. It is especially true for immediate cases of emergency like accidents: when lives are at stake and each passing moment is extremely important. In this sense, self-efficacy beliefs are particularly significant as they are predictive of the nature of action taken, the amount of effort put in given tasks, the outcomes produced by these efforts, and resilience to difficulties (Bandura, 2000). That is, first aid self-efficacy levels of individuals, teachers in our case, play a major part in defining whether they will put enough effort save the casualties, the quality of the first aid they provide and the extent to which they will endure when they come across with complications related to the accidents. Self-efficacy literature also suggests that if people do not believe that they have the capability to produce certain ends they never attempt at trying to make them happen (Bandura, 1997). This in turn leaves the casualties, i.e. school-age children, in a fragile position after the accidents take place. A solid sense of self-efficacy, on the other hand, removes the barriers in front of knowledge and skills, while low self-efficacy hinders the application of first aid knowledge even if the person is knowledgeable (Maibach, Scheiber, & Carroll, 1996).

As tomorrow's teachers, teacher candidates' beliefs of their first aid skills carry important hints about the kind of action they will take in emergency cases they will encounter at school and in other contexts in the future and determine their success in their efforts to save lives. Nevertheless, research related to the relationship between first aid and teachers heavily concentrated on their knowledge levels (Baser, Coban, Tasci, Sungur, & Bayat, 2007; Li, Jiang, Xingming Jin, Qiu, & Shen, 2012; Ransone & Dunn-Bennett, 1999; Slabe & Fink, 2013; Wiśniewski & Majewski, 2007). Findings of these studies, except for that of Slabe and Fink (2013) indicated significant deficiencies in teachers' first aid knowledge. On the other hand, there exists only one recently been published study on first aid self-efficacy (Wei et al., 2013) which, however, focused on parental first aid self-efficacy and the factor structure has not yet been confirmed.

The purpose of this study is therefore (1) to develop a sound measure of first aid self-efficacy that can be used with different groups of individuals, (2) validate the factor structure of the scale, (3) to assess the first aid self-efficacy levels of prospective teachers, and (4) to identify whether gender and the type of previously received first aid training makes a difference in first aid self-efficacy or not. Findings of this study are promising in terms of yielding valuable information on a measure that can be used to examine the extent laypersons and professionals feel confident in their first aid applications. This information may be critical for especially health care units, search and rescue organizations, and other agencies that provide first aid, in order for them to assess the practitioners' levels of confidence in providing life support to casualties. Yet, assessing the extent tomorrow's teachers feel confident in first aid can both secure the health of their students and emergent environments, and yet promote the decision makers to take necessary actions to embed first aid education in teacher education programs.

METHOD

Participants

The data to the study came from a sample of pre-service teachers studying in different teacher education programs at a public university in Turkey. The study protocol was approved by the Human Subjects Ethics Committee of the university and informed consent of the participants were obtained

verbally. For the scale development process, 123, for validation and further analyses 191 teacher candidates have been recruited. Mean age of the participants were 20.63 for the first, 20.55 for the second sample. Table 1 displays the characteristics of the participants per sample.

Instrumentation

To soundly assess first aid self-efficacy beliefs, the FASES (First Aid Self-Efficacy Scale) has been developed after an intense search of relevant literature on first aid skills that are deemed essential for life support and likely to be adopted by the immediate emergency care providers. Literature suggests that first aid and life support skills comprise of procedures including cardiopulmonary resuscitation (CPR), positioning for shock and unconsciousness, stabilization of wounds and injuries, and controlling bleeding (Eisenburger & Safar, 1999; Segen, 2012). As proposed by the European first aid guidelines, it additionally includes skills as ensuring personal safety and the safety of both the casualty and the bystanders, contacting professional healthcare providers, shielding the casualty from heat or cold, asking for his/her cooperation, applying easy, quick and safe first aid techniques, introducing self, evaluating the casualty's condition, explaining what has happened and will happen, providing psychosocial first aid to the casualty (being supportive, non-judgmental, empathetic), being careful about infection risks, controlling external bleeding, cooling burns, and taking care of spinal and head trauma, as well as musculoskeletal trauma and poisoning (Van de Velde et al., 2007).

Based on the accumulated literature on first aid, an initial pool of 23 items on all domains addressed in the literature i.e. the analysis, examination, and life supporting treatment of the casualty, psychological support, and hygiene factors, has been formed. Since self-efficacy beliefs are measured on 9-point scales (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001), participants have been asked to rate each item on a scale from 1 to 9; 1 standing for incompetent and 9 referring to quite competent. Higher scores obtained from the scale indicate higher levels of first aid self-efficacy.

To validate the content, a first-aid expert has been consulted and in the light of feedback received, some of the items were altered in terms of clarity and content, extra items were added and some have been dismissed. The structure of the scale was then enhanced through the use of two cognitive interviews; no major changes were indicated by the interviewees. After these scale enhancement processes, a final number of 26 items were developed to measure the construct.

Data analysis

Four steps were followed during analysis of data: (a) identifying the factor structure of the FASES through the use of exploratory factor analysis, (b) cross-validating the analysis by use of confirmatory factor analysis, (c) estimating each dimension's internal consistency reliability coefficients (Cronbach's alphas), and (d) providing further validity evidence.

Table 1. *Demographic Characteristics of the Participants (*$N_1 = 123,$ $N_2 = 191$*)*

Variable	n_1	n_2
Gender		
Female	100	160
Male	23	31
Department		
Foreign Languages Education	51	74
Elementary Mathematics Education	25	23
Early Childhood Education	16	29
Computer Education	14	19
Elementary Science Education	13	31
Grade level		
1	35	58
2	47	60
3	24	40
4	17	33
Previous first-aid training		
No training	62	88
Elementary school curriculum	26	49
Driving course	23	35
Voluntary professional training	11	17
Willing to receive further first aid training		

No	22	40
Yes	96	146

RESULTS

Identification of the factor structure (Exploratory Factor Analysis)

Prior to the interpretation of exploratory factor analysis results, factorability of the scale has initially been confirmed. The scale was proven factorable as Bartlett's test of sphericity showed that correlation matrix differed significantly from identity matrix (χ^2 = 2763.83, p = .00), Kaiser-Meyer-Olkin sampling adequacy measure (KMO = .93) was found greater than .60 (Hair Anderson, Babin, & Black, 2010), and diagonal anti-image correlations ranged from .88 to .96 considerably exceeding the .50 criterion (Field, 2009). Since multivariate normality test produced a significant result (p < .05), as a recommended method, principal axis factoring (PAF) has been used to extract the number of underlying factors (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Thus, to identify the factor structure of the FASES, exploratory factor analysis (EFA) with oblique rotation has been employed.

Table 2. *Summary of Items, Factor Loadings and Descriptive Statistics for the FASES (N = 123)**

Items	Factor loadings		M (SD)
	1	2	
Factor 1 (α = .96)			3.88 (1.57)
13. I can move the casualty by selecting the most appropriate position for his/her condition.	.92		2.92 (2.36)
16. I would not have difficulty picking up the age-appropriate intervention.	.91		2.98 (2.08)
17. I can carefully position the casualty to in the safest position if s/he is breathing.	.90		2.95(2.95)
25. I can effectively treat the casualty's injuries (broken bones, burns, etc.).	.85		3.33 (2.16)
26. I can perform CPR if the casualty is not breathing.	.84		3.56 (2.30)
10. I can control extensive bleeding.	.79		3.26 (2.38)
7. I can ensure that the airway of the casualty is clear.	.76		3.05 (2.27)
3. I can prevent the casualty's condition from getting worse.	.71		3.22 (1.19)
24. I can quickly assess the casualty's health condition.	.70		3.89 (2.18)
4. I can take precautions to reduce the infection risk during first aid implementation.	.64		4.11 (2.40)
1. I can perform top-to-toe injury check of the casualty if s/he is breathing.	.64		4.74 (2.06)
5. I can assess the casualty's consciousness through the touch-and-listen method.	.63		4.53 (2.36)
6. I can create a safe environment for the casualty and those around.	.63		3.50 (2.09)
22. I can assess the casualty's breathing through the look-listen-feel method.	.59		3.84 (2.44)
14. I can employ the hygiene rules necessary to follow for the casualty's health.	.55		4.46 (2.28)
23. I can keep the casualty away from the dangers around.	.46		4.83 (2.19)
12. In case of multiple casualties, I can detect the casualty of top priority.	.43		4.34 (2.26)
Factor 2 (α = .91)			5.45 (1.80)
19. I can call the emergency phone number and calmly address the situation for the authorities.		.88	6.82 (1.95)
11. I can calmly ask questions to the casualty and those around to understand the situation.		.82	5.07 (2.23)
21. I can cooperate with those around to maintain the control of the emergency scene.		.82	6.07 (1.94)
20. I can protect the casualty from heat/cold.		.71	5.60 (2.02)

2.	I can respond to the casualty's psychological needs.	.65	5.40 (1.88)
15.	I can act calmly.	.61	4.81 (2.27)
8.	I can remedy the anxiety of the casualty.	.55	4.72 (2.55)
18.	I can inform the casualty of the progress made.	.53	4.64 (2.44)

The scale is originally in Turkish.

Initially, eigenvalues greater than 1.0 produced 4 factors; however, when pattern matrix was examined, no items were observed to load to the third and the fourth factors. Consequently, the structure was restrained to extract two factors, a decision also supported by the Scree test. The two-factor extracted model accounted for 59.6% of variance with an average communality of .60 and pattern coefficients higher than 0.30 (Stevens, 2009). Items 9 and 12 cross loaded on both factors with coefficients beyond .32 (Tabachnick & Fidell, 2013), therefore, item 9 ("I would not have difficulty in getting permission from a conscious casualty for implementing first aid.") has been deleted as there are other strong loaders on the factor (Costello & Osborne, 2011) and there exists an alternative item that will ensure content validity is not compromised. Item 12 has been retained due to the same concerns on content validity. Additionally, reliability coefficients for the two factors .96 and .91 indicated a highly clear factor structure (Nunnaly, 1978). Table 2 summarizes the items, factor loadings, and descriptive statistics of the finalized 25-item First Aid Self-Efficacy Scale.

Finally, making use of the relevant literature (Eisenburger & Safar, 1999; Segen, 2012; Van de Velde et al., 2007), the factors has been named as (1) *Self-efficacy for life support* (SLS: 17 items), and (2) *Self-efficacy for basic first aid* (SBFA: 8 items). The highest scores that can be obtained from the SLS and SBFA are 153 and 72, respectively; higher scores referring to higher self-efficacy in providing first aid.

Validation of the factor structure (Confirmatory Factor Analysis)

To confirm the factor structure of the 25-item FASES identified through exploratory factor analysis, confirmatory factor analysis (CFA) has been employed. To maintain parsimony and obtain an optimal variable to sample size ratio, item parcels were created. In order to derive equally balanced parcels in terms of difficulty and discrimination, item-to-construct relations have been used. As suggested by Little, Cunningham, Shahar and Widaman (2002), to create item-to-construct balanced parcels, four items with the highest loadings anchored the four parcels, four items with the next highest loadings have then been added to the anchors in an inverted order. After this procedure, 4 parcels for Factor 1, and 2 parcels for Factor 2 have been created and analyzed. Table 3 demonstrates the parcel structure tested in CFA.

Table 3. *Items in the Corresponding Factor and Parcel Structure*

	Factor 1				Factor 2	
	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5	Parcel 6
Items	13	16	17	25	19	21
	3	7	10	26	20	11
	24	4	1	5	2	15
	23	14	22	6	18	8
	12					

Maximum likelihood estimation with bootstrapping was used in which 2000 random samples from the data were drawn to define goodness-of-fit. Since the initial attempt did not produce an excellent model fit, modification indices were checked to identify the sources of strain and error covariance of parcel 2 and parcel 4 were freely estimated. Results of the CFA showed that all item parcels in the respecified model loaded significantly to the respective factors with loadings ranging from .90 to .96. Moreover, several fit statistics have been examined to assess the fit between the hypothesized model and sample data based on cut off values recommended by the literature (Table 4).

Table 4. *Measures of Goodness-of-Fit*

Fit index	Rule of thumb	Reference
χ^2/df	2-3	Carmines & Melver (1981)
GFI	> .95: good fit	Byrne (1994)
CFI	> .95: superior fit	Hu & Bentler (1999)
RMSEA	< .05: close fit	Browne & Cudeck (1993)
	< .08: reasonable error of approximation	

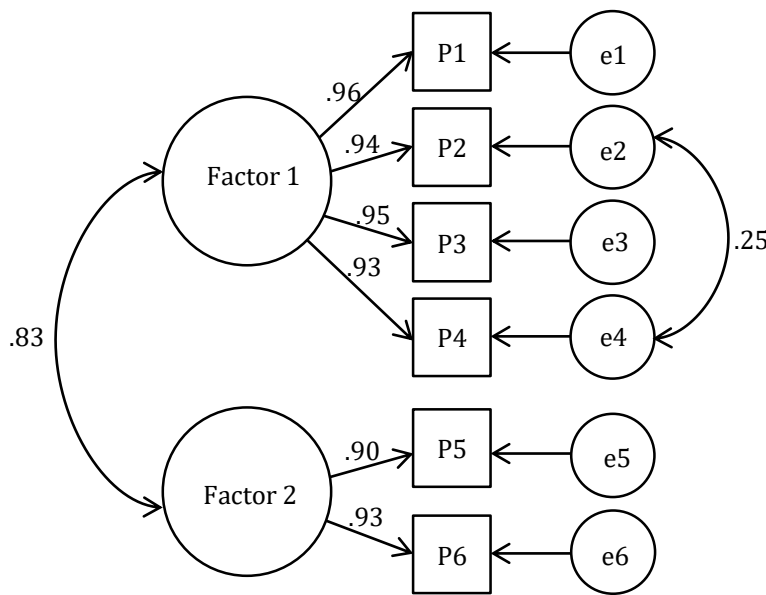|	> .10: not to be used	
SRMR	< .08: good fit	Hu & Bentler (1999)

Figure 1. *Parcel loadings of the 2-factor FASES.*

The cited indices for the 2-factor model FASES indicated very good fit with χ^2/df = 2.06, p = .44; GFI = .98; CFI = .995; MECVI = .229, CI = .19 - .30; SRMR = .009, except for RMSEA = .075, which indicated reasonable error of approximation rather than close fit. RMSEA statistic, on the other hand, is known to favor larger models and over-rejects true population models by imposing a disadvantage on smaller models with relatively few variables (Breivik & Olsson, 2001; Hu & Bentler, 1999; Kenny, Kaniskan, & McCoach, 2015). Figure 1 offers a summary of the CFA results.

The effect of type of prior first aid training and gender (MANOVA)

Before moving on to the results of MANOVAs, descriptive statistics have been investigated to assess the first aid self-efficacy levels of the pre-service teachers. Paired t-test results showed that participants reported significantly higher self-efficacy on the SBFA items (M = 5.45, SD = 1.80) than on SLS items (M = 3.88, SD = 1.57). That is, they felt more competent to implement basic first aid skills as calling the emergency number and sheltering the casualty from the heat/cold; however, they felt less self-efficacious in skills that required more in-depth first aid knowledge and are more critical to save lives such as implementing CPR and positioning the casualty. However, given the 9-point scale, both mean scores indicated rather low levels of first-aid self-efficacy, meaning the pre-service teachers did not feel fairly competent in attempting to preserve lives.

In order to identify whether gender and the type of prior first aid training the participants makes a significant difference on their first aid self-efficacy levels, two one-way MANOVAs were conducted.

The type of prior first aid training included: (1) no training, (2) elementary school curriculum, (3) driving course, and (4) voluntary professional training. Originally being (N = 88), (N = 49), (N = 35), and (N = 17) respectively, as Tabachnick and Fidell (2007) strongly suggests, cases from the categories with greater cell size, i.e. 1, 2, and 3, have been randomly deleted from cells until all cells are equal (N = 17) in order not to compromise the power. The same procedure has also been employed for gender (N_{women} = 160, N_{men} = 31) and the final cells consisted of 31 med and 31 women.

The results of one-way MANOVA (See Table 5) for training type demonstrated significant mean differences both on SLS ($M_{no\ education}$ = 3.04, $M_{must\ course}$ = 3.72, $M_{driving\ course}$ = 4.50, $M_{voluntary\ training}$ = 7.40), and SBFA ($M_{no\ education}$ = 4.70, $M_{must\ course}$ = 5.32, $M_{driving\ course}$ = 6.00, $M_{voluntary\ training}$ = 7.64).

Table 5. *Multivariate and Univariate Analyses of Variance Main Effects of Training Type on SLS and SBFA*

	Multivariate [a]			Univariate [b]					
				SLS			SBFA		
Variable	F	p	η^2	F	p	η^2	F	p	η^2
Training type	9.39	.00	.31	31.26	.00	.59	14.53	.00	.41

Note. Multivariate F ratios were generated from Pillai's statistic.
[a]Multivariate df = 6, 128. [b]Univariate df = 3, 67.

Tukey post-hoc group comparisons revealed that participants who voluntarily attended professional training have significantly higher first aid self-efficacy than all other three types of training on both SLS and SBFA. Additionally, participants who received first aid training in driving courses scored significantly higher on SLS than those had no training but not on SBFA.

Moreover, as can be seen in Table 6, the results of one-way MANOVA for gender demonstrated that men held significantly higher mean scores on both SLS (M_{women}= 4.10, M_{men} = 7.04), and SBFA (M_{women} = 6.63, M_{men} = 7.10).

Table 6. *Multivariate and Univariate Analyses of Variance Main Effects of Gender on SLS and SBFA*

	Multivariate [a]			Univariate [b]					
				SLS			SBFA		
Variable	F	p	η^2	F	p	η^2	F	p	η^2
Gender	15.88	.00	.33	26.96	.00	.29	8.25	.01	.11

Note. Multivariate F ratios were generated from Pillai's statistic.
[a]Multivariate df = 2, 65. [b]Univariate df = 1, 67.

DISCUSSION

It is known that most bystanders do not take responsibility in emergency situations as a result of the fear of liability and lack of confidence in first aid skills (Larsonn, Martensson, & Alexanderson, 2002). Fear or anxiety have been observed to reduce one's sense of efficacy (Maibach et al., 1996). As Eisenburger and Safar (1999) suggest, individuals' decisions to act depend fairly on acknowledging the situation and having confidence in one's ability to handle the emergency. Research has consistently shown that trained individuals are more competent than untrained individuals in providing first aid (Abbas, Bukhari, & Ahmad, 2011; Anderson & Gaetz, 2008; Bollig, Wahl, & Svendsend, 2009). First aid training to laypersons is found to be significantly efficient in producing sound first aid practices (Berkebile, Benson, Ersoz, Barnhill, & Safar, 1975; Bircher & Safar, 1983; Fleischhackl et al., 2009; Lind, 1961; Safar, 1958; Winchell & Safar, 1966).

This study intended to identify the underlying factor structure of 26-item First Aid Self-Efficacy Scale (FASES) and validate it. Exploratory Factor Analysis results indicated a 2-factor structure for FASES and the findings of the Confirmatory Factor Analysis confirmed the structure.

The mean scores of participants on two factors showed that they felt much less self-efficacious to implement complex first aid skills such as implementing CPR, making age-appropriate distinction for first-aid intervention and dealing with broken bones and burns. On the other hand, they felt significantly more efficacious enough in describing the case upon calling the emergency phone number, protecting the casualty from heat or cold, and cooperating with bystanders to maintain the order of the accident scene. This finding indicated that there is a need for educating pre-service teachers for more challenging first aid skills than skills that are less complex.

Also in line with the findings of Wei et al. (2013) and Lee and Chen (2009), the scale also differentiated between genders; men reporting higher first aid self-efficacy on both elementary and complex first aid skills.

Similar to previous findings in the literature (Lee and Chen, 2009), results of the one-way MANOVAs showed that persons with more intense and voluntary experience with first aid reported higher self-efficacy. Those who volunteered to receive special training and attended well-structured first aid training courses, indicating positive attitude towards first aid, reported stronger beliefs. This indicates the significance of promoting the interest towards first aid and also a need for the improvement of must and driving courses.

Yet, since lack of ample training and practice and thus inadequate self-efficacy beliefs result in insufficient first aid skills (Das & Elzubeir, 2001), lives of the children of teachers with no training are at stake in cases of emergency. While first-aid education is mandatory at certain grades in the K-12

school curricula and its successful completion is compulsory to qualify for a driver's license, the course does not have a place in teacher education programs in most countries. On the other hand, in many developed countries as the USA, Australia, and Germany, teachers are required by legislation to be certified in CPR and first aid prior to employment and they are not allowed to teach in case of failure to satisfy the stipulation.

Considering that most accidents occur outside the hospital settings or in places with necessary equipment unavailable to offer care to the casualties (Das & Elzubeir, 2001), and since the results of this study confirmed that self-efficacy beliefs of individuals who have completed well-organized first aid training outweighed the self-efficacy of those with no training, it can be fairly strongly advocated that there is a need for systematic first aid courses to be embedded into the teacher education programs in order to ensure the safety of children. Therefore, offering sound and structured education to inform teachers of first aid skills is promising to preserving human life and should be mandatory in teacher education programs (Wiśniewski & Majewski, 2007). Yet, courses offered at K-12 level and driving courses are seen to definitely need to offer more sound education offering not only knowledge and skills but also confidence (Das & Elzubeir, 2001). Yet, individuals, especially teachers need to be motivated to acquire first aid skills and to act in can cases of actual emergency (Eisenburger & Safar, 1999). In this respect, motivation for and awareness towards first aid can be increased by the use of mass media, internet, TV, textbooks and other tools that would lead to an awareness. As Eisenburger and Safar (1999) put it, if how to save a life is not worth teaching, then what is?

Limitations and implications for further research

What is needed is to provide further construct validity evidence. An outcome expectancy scale, a similar construct to self-efficacy, can be co-administered with the FASES as to propose correlational evidence. By this means, the FASES would confirm that the two related constructs are in fact related and that they measure correctly what they intend to measure in the same manner (Cracker & Algina, 1986). Yet, discriminant validity evidence can also be maintained through the use of a scale that measures first aid knowledge of the participants to prove that the two instruments indeed measure theoretically different constructs.

To offer criterion validity evidence, after administering the FASES, actual first aid performances of the participants can be observed to test whether first aid self-efficacy beliefs accurately predict the actual first aid behavior. The study can be extended to administer the scale to physical education teachers, in-service teachers' and laypersons to fully explore the concept of first aid self-efficacy.

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