

Impact of training course on physicians' skills in diagnosing and treating post traumatic stress disorders:

A study from internally displaced persons camps in the Kurdistan Region of Iraq

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ABSTRACT

Introduction: Internally displaced persons are "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or to avoid the effects of armed conflict or violence and who have not crossed an internationally recognized border. Primary care physicians have been shown to lack the necessary training to provide appropriate diagnosis and treatment for post-traumatic stress disorder, making them unprepared and unsure in their work with trauma survivors.

Objective: is to identify the physicians' self-assessment of their skills in diagnosing and treating PTSD and to measure the impact of a validated training course on their assessment. This study focuses on physicians working in primary healthcare centres within internally displaced persons camps in the Kurdistan region of Iraq.

Methods: An interventional study was conducted in primary health care centres in the camps of internally displaced persons in Erbil city in Kurdistan region- Iraq, from 1 November 2017 to the end of February 2018. Sixty-seven physicians of different specialities from these centres who consented to participate were enrolled. Their self-assessment of skills about the diagnosis and treatment of PTSD was evaluated using predetermined questions before receiving a validated training course on the diagnosis and management of PTSD. Assessments were conducted again one week and one month following the completion of the training.

Results: Participants' mean age \pm SD and years of practice were 38.6 ± 6.9 years and 13.7 ± 5.6 years, respectively. Males constituted 64.2% of the participants. The overall skill score before training was 1.69, increased to 2.83 one week after the training and then decreased to 2.63 one month after, with a statistically significant association ($P < 0.001$).

Conclusion: The skills of physicians working at the primary healthcare centre in IDP camps in diagnosing and treating patients with PTSD are essentially inadequate. However, a training course improved their skills significantly one week after the training and maintained to one month after it, though to a lesser extent. .

Key words: Internally displaced person, Post traumatic distress syndrome, Iraq.

INTRODUCTION

Internally displaced persons (IDPs) are "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-

made disasters, and who have not crossed an internationally recognized border.^[1]

Mental health and psychosocial support activities are now an integral part of any humanitarian response and, as such, are recognized as requirements of humanitarian response across a range of contexts and scenarios. Iraqi people have experienced



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many traumatic events on an ongoing basis and have suffered as a result of these events. These events include many wars; the worst event experienced by the Iraqi people was the violence and terrorism that followed the occupation of Iraq from 2003 onwards.^[2] Three waves of displacement since January 2014 resulted in more than two million Iraqi displaced persons. The majority of displaced people who are currently living in camps are located in the Kurdistan region.^[3]

The primary care physicians (PCPs) were found to have a disability in diagnosing mental and psychosocial disorders encountered in IDPs camps like post traumatic stress disorder (PTSD) and improper dealing with these cases after diagnosis.^[4] The most common reason for increased mental and psychosocial cases was the failure of PCPs to recommend treatment.^[5] Thus, cases like PTSD patients presenting in primary care often go unrecognized and untreated, which can lead to the chronic psychosocial, occupational, and functional impairments commonly associated with PTSD.^[6] Research provides strong support for the effectiveness of mental health interventions based on cognitive behavioural therapy for PTSD, leading to the highest priority for implementation of behavioural therapy in the primary healthcare systems.^[7] Different techniques are used to train PCPs to implement mental health programs; the most common are face-to-face training and web-based programs.^[8-10]

In the present study, face-to-face training was used, which is effective in some areas of intervention but is too resource-intensive to provide on the scale required to reach community-based programs.^[10]

Data on physicians' self-assessments regarding their skills in diagnosing and treating PTSD in primary healthcare centres in Iraq are limited. Our goal is to evaluate the physicians' self-assessment of their skills in diagnosing and treating PTSD and to measure the impact of a validated training course on their assessment. This study focuses on physicians working in primary healthcare centres within internally

displaced persons camps in the Kurdistan region of Iraq.

METHODS

Setting and study design: This interventional study was conducted in 7 primary healthcare centres (PHCCs) of five IDP camps in Erbil. These camps were Baharka, Harsham, Debka, Khazer and Hassan-Shami camps. Each camp has one PHCC except the Baharka and Harsham camps, which have two PHCCs for each. These PHCCs serve about 250,000 persons who have been displaced, mainly from Ninawa, Anbar, and Salah Al-din governorates. This study was conducted from 1 November 2017 to the end of February 2018.

Ethical consideration: The researchers gain approval for the protocol of this study from the Ministry of Health and Erbil Health directorate. An official agreement was taken from the administration of each PHCCs before conducting the study. The researcher explained the aims of the study to the doctors enrolled, and their written informed consent was obtained from each enrolled physician before the study was conducted. Enrolled physicians were assured that their answers would be confidential and not be shared with anybody and that participation in the research and participants' answers would not negatively impact their work in the future. The researcher used the English language to communicate with the participants.

Case definition, inclusion and exclusion criteria: Sixty-seven physicians from all primary health care centres were included in this study. They were general, family, Internal, paediatric, and community physicians. Physicians who were refused to participate were excluded from the study.

Sampling: All physicians eligible are included in the study.

Questionnaire, procedure and the outcomes: We collected data through a self-administered questionnaire in English. The researchers designed this questionnaire and assessment

papers based on available literature.^[11] The questionnaire comprised three papers, which included the following:

1. Socio-demographic characteristics: Age, gender and recent displacement.
2. Occupational characteristics: Years of professional experience and experience with PTSD.
3. Skills assessment of PTSD before the training course.
4. Skills assessment of PTSD directly and one month after the training course.

Schedule of training: The training program utilized web-based modules developed by the USA Department of Veterans Affairs, specifically tailored for the education of medical doctors.^[12,13]

The program spanned over one month and was delivered in four sequential groups for each primary healthcare centre (PHCC) to disrupt the centre's daily operations minimally. The training modules aim to improve clinical skills, develop knowledge, increase self-efficacy and improve practice related to cognitive behavioural therapy (CBT) techniques.

The training course includes:

- **First day:** introduction to PTSD; definition, prevalence, history of displacement in Iraq and impact of displacement on mental health.
- **Second day:** diagnostic criteria of PTSD and early detection of PTSD in PHCC (screening tools), expected response of IDPs to the screening tool and how to deal with these responses.
- **Third day:** comorbidities with PTSD like depression.
- **Fourth day:** Pharmacological management of PTSD allowed in PHCC; The dosage, side effects, and contraindications.
- **Fifth day:** Psychotherapy management of PTSD, which is the cornerstone of PTSD management.

The training program included practical sessions implemented by the researchers to

teach the attendant physicians about how to implement PTSD screening among IDPs. In this demonstration, we used four screening questions for the early identification of PTSD in IDPs who experienced traumatic events at least one month ago, which include:^[14]

1. Did you have nightmares about the disaster, or did you always think about it?
2. Have you had efforts to stop thinking about disaster or tried to avoid situations that remind you?
3. Always vigilant, had a defence behaviour, or easily amazed?
4. Felt paralyzed or dissociated from others, activities, or surroundings?

The tool used to measure the physicians' perception of their skills in diagnosing and treating PTSD before and after the application of the training program included six questions in the following domains: definition, epidemiology, screening, diagnosis, and management of PTSD. These questions were about the physician's comfort in suspecting, diagnosing, running the screening of PTSD, managing PTSD with drugs, managing PTSD with non-drug therapies and referring patients with PTSD. For each question, the participants were asked to select an answer based on 1-5 items on the Likert scale: not at all, slightly, sometimes, moderately, very much. This tool was applied one week before the training and repeated one week and one month after it.

Statistical analysis: data of all participants were checked and analyzed using the statistical package for social sciences (SPSS) version 24. Descriptive statistics were expressed as the mean, standard error of mean, frequencies and proportions. The participants' responses were presented as frequencies and proportions; then, The skill items were allocated one to five marks; the better the perception of the participant's skill, the higher the score. The mean score was calculated for each participant by summing the scores for each skill item divided by the total number of items.

All continuous variables were examined for normal distribution using quantile-quantile (Q-

Table 1 | Demographic variables physicians worked at the PHCCs in the camps of IDPs in Erbil, Kurdistan Region-Iraq in 2017.

Variable	No.	%
Age (years)	Mean± SD= 38.6 ±6.9	
< 30	11	16.4
30 - 39	35	52.2
40 - 49	14	20.9
≥ 50	7	10.4
Gender		
Male	43	64.2
Female	24	35.8
Profession		
General practitioner	31	46.3
Family medicine	18	26.8
Internal medicine	11	16.4
Paediatrics	5	7.5
Community medicine	2	3
Years of practice	Mean± SD = 13.7 ±5.6	
≤ 10	18	26.9
11 - 15	29	43.3
16 - 20	12	17.9
> 20	8	11.9
Total	67	100.0

the general linear models, repeated measures and pairwise comparisons based on estimated marginal means and least significant difference (LSD). The significance level was set at ≤ 0.05 as a cutoff point, below or equal to which the difference or correlation is significant. Finally, results and findings were presented in tables and figures with an explanatory paragraph for each, using Microsoft Office Word software version 2016 for Windows.

RESULTS

Sixty-seven physicians were enrolled in this study; their demographic characteristics are shown in **Table 1**. The mean±SD of age and the number of years of practice of the participants were 38.6±6.9 years and 13.7±5.6 years, respectively. Additionally, almost half of the participants were in the fourth decade of life, and most were in practice for more than ten years. Males constituted 43(64.2%) of the participants. Among the 67 participants, general practitioners were 31 (46.3%), and family medicine doctors were 18 (26.8%).

Q) plots. The mean scores of participants' skills before training and first and second tests (T1 and T2) after training were compared using

The distribution of responses of the 67 physicians towards items of skills in suspecting, diagnosing or managing PTSD before training is

Table 2 | Responses of the participants towards items of skills in suspecting, diagnosing or managing PTSD before training

Skill item	Not at all		Slightly		Sometime		Moderately		Very much	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suspecting PTSD	28	41.8	19	28.4	15	22.4	4	6.0	1	1.5
Running the needed screening	34	50.7	16	23.9	11	16.4	6	9.0	0	0.0
Diagnosing PTSD	37	55.2	19	28.4	8	11.9	3	4.5	0	0.0
Managing PTSD with drugs	54	80.6	9	13.4	3	4.5	1	1.5	0	0.0
Managing PTSD with non-drug therapies	44	65.7	12	17.9	8	11.9	3	4.5	0	0.0
Referring PTSD cases	39	58.2	10	14.9	10	14.9	6	9.0	2	3.0

Table 3 | Responses of the participants towards items of skills in suspecting, diagnosing or managing PTSD at the first test after training.

Skill item	Not at all		Slightly		Sometime		Moderately		Very much	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suspecting PTSD	5	7.5	8	11.9	24	35.8	25	37.3	5	7.5
Running the needed screening	5	7.5	12	17.9	26	38.8	16	23.9	8	11.9
Diagnosing PTSD	11	16.4	24	35.8	21	31.3	9	13.4	2	3.0
Managing PTSD with drugs	17	25.4	13	19.4	31	46.3	5	7.5	1	1.5
Managing PTSD with non-drug therapies	13	19.4	29	43.3	17	25.4	7	10.4	1	1.5
Referring PTSD cases	8	11.9	9	13.4	20	29.9	12	17.9	18	26.9

Table 4 | Responses of participants towards items of skills in suspecting, diagnosing or managing PTSD at the second test after training.

Skill item	Not at all		Slightly		Sometime		Moderately		Very much	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suspecting PTSD	4	6.0	10	14.9	31	46.3	19	28.4	3	4.5
Running the needed screening	11	16.4	18	26.9	25	37.3	10	14.9	3	4.5
Diagnosing PTSD	9	13.4	27	40.3	22	32.8	8	11.9	1	1.5
Managing PTSD with drugs	21	31.3	11	16.4	31	46.3	3	4.5	1	1.5
Managing PTSD with non-drug therapies	19	28.4	21	31.3	21	31.3	5	7.5	1	1.5
Referring PTSD cases	10	14.9	10	14.9	24	35.8	11	16.4	12	17.9

Table 5 | Responses of participants towards items of skills in suspecting, diagnosing or managing PTSD at the second test after training.

Skill item	Before Training		After Training T1		After Training T2		Multiple comparisons with p-values		
	Mean	SE	Mean	SE	Mean	SE	P1	P2	P3
Suspecting PTSD	1.97	0.12	3.25	0.12	3.10	0.11	< 0.001	< 0.001	0.049
Running the needed screening	1.80	0.12	3.15	0.13	2.64	0.14	< 0.001	< 0.001	< 0.001
Diagnosing PTSD	1.66	0.11	2.51	0.12	2.48	0.11	< 0.001	< 0.001	0.60
Managing PTSD with drugs	1.27	0.08	2.40	0.12	2.28	0.12	< 0.001	< 0.001	0.20
Managing PTSD with non-drug therapies	1.55	0.11	2.31	0.12	2.22	0.12	< 0.001	< 0.001	0.16
Referring PTSD cases	1.84	0.14	3.34	0.16	3.07	0.16	< 0.001	< 0.001	0.002
Overall skill score	1.69	0.04	2.83	0.05	2.63	0.04	< 0.001	< 0.001	< 0.001

P1: P-value before training vs. after training T1. P2: P-value before training vs. after training T2. P3: P-value after training T1 vs. after training T2

shown in **Table 2**. We found that 28 (41.8%) of participants selected “not at all” in suspecting PTSD, 34 (50.7%) selected “not at all” in answering running the needed screening, 37 (55.2 %) selected “not at all” in answering diagnosing PTSD, 54 (80.6%) selected “Not at all” in answering management of PTSD with drugs, 44 (65.7%) selecting “not at all” in answering management PTSD with non-drug therapies, and 39 (58.2%) selecting “not at all” in referring PTSD cases.

After training (T1), the picture was much different than that before training. The proportion of selecting “not at all” was remarkably reduced for all questions, with increasing frequencies of selecting “sometimes” and “slightly” instead. For more details, see **Table 3**. **Table 4** shows the proportions of answers to

after-training T2.

To test the significance of applying for the training program on the perception of the participants on their skills in suspecting, diagnosing or managing PTSD, we calculated the mean for each question before and after training using general linear model repeated measure, pairwise multiple comparisons and post hoc tests (LSD). These statistical analyses revealed that the mean skill score for each item of skill questionnaire and the overall mean score of skill were significantly higher after T1 and T2 training than before training (P< 0.001). Comparing the mean skill score at T1 with that at T2 revealed a significant reduction in the mean skill score in three of the five skill items. The overall skill score before training was 1.69, increased to 2.83 at T1, then decreased to 2.63 at T2. However, the scores after T1 and T2 were significantly higher than before training, with a P< 0.001. **Tables 5, 6** and **Figure 1**.

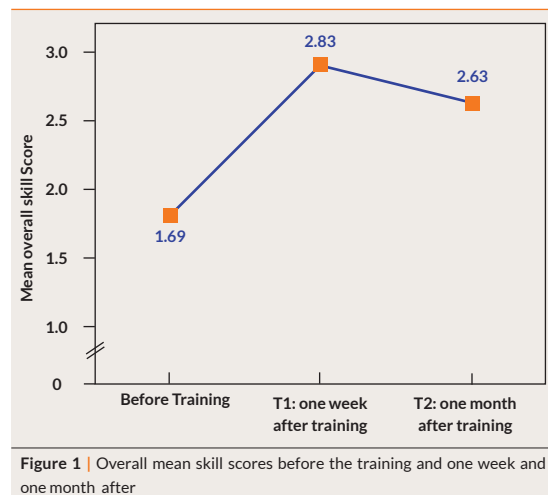
Table 6 | Pairwise Comparisons of overall mean skill scores before and after training

Pairwise comparisons	Mean Difference	SE	P. value	95% CI for difference	
				lower limit	Upper limit
Before training - T1	- 1.142	0.039	< 0.001	- 1.219	- 1.064
Before training - T2	- 0.948	0.046	< 0.001	- 1.040	- 0.855
T1 - T2	0.194	0.029	< 0.001	0.135	0.253

T1: One week after the end of the training course, T2: One month after the end of the training course

DISCUSSION

Large sectors of populations worldwide



suffer from various mental health issues, particularly in low-income countries.^[15] Disasters in these regions have exacerbated the burden of mental disorders, necessitating urgent interventions. Following catastrophic events, conditions like PTSD and depression can affect approximately two-thirds of the surviving population in some countries.^[16,17] In Iraq, poor security conditions and frequent disasters, compounded by bureaucracy and political changes, have hindered health development over the past decades. The delay in developing the health system is due to ineffective information systems and poor management in implementing healthcare standards. Key weaknesses in the Iraqi national health system include unequal distribution of medicines and equipment, staff movement, and unorganized training opportunities for staff.^[18]

Demographic characteristics of physicians:

The mean age of participants in our study was 38.6 years, with the majority falling within the 30-39 year age group. This finding is consistent with a study by Hosuglu^[19] in Iraq, which found that most healthcare workers in Erbil, particularly doctors, were between 30 and 39 years old. This age distribution can be attributed to a high proportion of physicians in Iraq beginning their medical careers in early to middle age and working in primary health care centers in slums and camps for internally displaced persons. Approximately two-thirds of the trained physicians in our study were male. This gender disparity among Iraqi physicians

was also observed in a study by Squires,^[20] which reported that 71% of physicians in Iraqi Kurdistan were male. Gender differences in the medical field, career paths, and specialty preferences are common in Iraq, influenced by cultural and social factors.^[21]

This study found that 46.3% of the trained physicians were general practitioners, while the rest were specialists in various medical fields. According to the World Health Organization (WHO), 45% of medical doctors in Iraq are general practitioners. The WHO has recommended training Iraqi general practitioners in specialized family medicine programs to enhance the capacity of the national health system.^[22] The average years of practice among the physicians in our study was 13.7 years. This is higher than the findings of Shabila,^[23] which reported an average of seven years of practice for physicians in Erbil. The discrepancy may be due to differences in the inclusion criteria between the two studies and the fact that the physicians in our study were primarily from the Ninawa Health Directorate, where the medical career path has been prolonged and disrupted by poor security conditions in Mosul.

PTSD skills of physicians

Before training: Our study found that 54 physicians (80.6%) responded “not at all” when asked about their comfort level in treating PTSD patients with medication, and 39 physicians (58%) responded “not at all” regarding their comfort level in referring PTSD patients, with an overall mean skill score of 1.96 before training. In Iraq, physicians tend to refer suspected PTSD cases as their first option. In contrast, in the USA, management is the priority for PTSD cases detected in primary health care centres, with referrals constituting only 3.25% of suspected cases, as reported by Bolduc.^[24] In Iraq, the WHO plans to implement special training programs to enhance the capability of primary health care providers to prescribe medications for PTSD treatment earlier, aiming to prevent comorbidities and reduce the need for referrals to psychiatrists.^[25]

After training: After the first training test (T1), 26.9% of physicians showed higher skills in referring PTSD patients to psychiatrists. This percentage decreased to 17.9% after the second training test (T2). Conversely, the lower skills observed in managing PTSD cases with drugs increased from 25.4% after T1 to 31.3% after T2. The overall mean skill score was 2.83 after T1 and declined to 2.63 after T2. This decline in the mean skill score after the second training might be attributed to the short duration of the training and the low number of PTSD patients diagnosed by physicians between the two tests, resulting in limited experience and skill development.

Despite these findings, there was a statistically significant increase in the overall mean skill score of physicians regarding PTSD after both the first training test ($p < 0.001$) and the second training test ($p < 0.001$). This aligns with Ruzek's [26] study in the USA, which used online self-administered training courses for 168 mental health providers and demonstrated significant improvements in knowledge, skills, and self-efficacy in diagnosing PTSD cases. However, the overall mean skill score after the second training test was significantly lower than after the first ($p < 0.001$). This result is consistent with Samuelson's [27] study in the USA.

The discrepancy in skills, like that in knowledge, observed between training tests T1 and T2 highlights a knowledge and skill gap over time. This finding emphasizes the significance of ongoing medical education and training for healthcare professionals working in primary healthcare settings. Gaspard's [28] study in Taiwan underscored the essential nature of continuous training for healthcare professionals in enhancing the primary healthcare system. However, providing training and continuing medical education for medical staff encounters numerous obstacles in Iraq. These include inadequate planning for training needs, scarcity of training courses, substandard quality of available courses, unqualified trainers, and inefficient distribution of trained staff post-training. [29]

The improper selection of staff for training or inefficient distribution after that is prevalent not only in the medical sector but across all Iraqi institutions, often attributed to nepotism, administrative corruption, and chaos. These factors contribute to the wasting of public resources and undermine the effectiveness of the primary healthcare system. Al-Hilfi's [30] review highlighted Iraq's heavy reliance on clinical and hospital-centric health services, impeding the establishment of a robust public health system. Current programs are primarily limited to physicians, lacking a broader focus on health services management, health policy, health financing, and the social sciences—areas integral to public health training elsewhere and crucial for Iraq's healthcare system. [30]

CONCLUSION

The skills of physicians working at the primary healthcare centre in IDP camps in diagnosing and treating patients with PTSD are essentially inadequate, with referring to psychiatrists as the first preferred option. However, the training course provided for them improved their skills significantly one week after the training and maintained them one month after it, though to a lesser extent.

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Abbreviations list: Cognitive Behavioural Therapy (CBT), Internally displaced persons (IDPs), Post-traumatic stress disorder (PTSD), Primary care physicians (PCPs), Primary Healthcare Centres (PHCCs), Standard Deviation (SD), Statistical package for social sciences (SPSS), United States of America (USA), World Health Organization (WHO).

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