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## SHORT COMMUNICATION

**TITLE: Can a brief training intervention on schizophrenia and depression improve knowledge, attitudes and practices of primary healthcare workers? The experience in Armenia.**

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## ABSTRACT

**BACKGROUND:** Although the World Health Organization has called for mental health services to be integrated into primary care, mental health remains in most countries, and especially in low- and middle-income countries, one of the most neglected topics in the training curriculum of frontline health workers.. As a result, primary healthcare professionals leave medical and nursing schools with insufficient knowledge, and often with negative attitudes towards mental disorders.

**AIM:** We investigated the effect of a brief training intervention on schizophrenia and depression conducted among general practitioners and nurses in Armenia.

**METHODS:** Training interventions were one-day, face-to-face, interactive workshops, including didactic presentations and discussions of case studies. We used a quasi-experimental design of the before/after type, to compare data on knowledge, attitudes and practices collected before and after the training sessions.

**RESULTS:** Mean scores for knowledge, attitudes and practices increased significantly ( $p < 0.001$ ) among both nurses and GPs for both schizophrenia (111 GPs and 167 nurses) and depression (459 GPs and 197 nurses).

**CONCLUSIONS:** Our experience suggests that a brief training intervention can result in significant improvements in knowledge, attitudes and practices among primary healthcare workers and could help improve mental health services.

**KEYWORDS:** Armenia, depression, primary healthcare workers, schizophrenia, training.

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## 1. INTRODUCTION

Although mental disorders contribute to a significant proportion of the global disease burden, they remain vastly under-diagnosed and under-treated. In particular, in low-and middle-income countries (LMICs), where it is estimated that 76-85% of people with mental disorders receive no treatment [World Health Organisation, 2019]. In LMICs, mental health professionals are in small number, and although the World Health Organisation (WHO) has recommended for mental health services to be integrated into primary care [World Health Organisation, 2019], mental health training is grossly inadequate in the curriculum of primary healthcare professionals.

Armenia is a small landlocked country in the Southern Caucasus region of Eurasia, of which Yerevan is the capital. It is a former republic of the Soviet Union, with a population of approximately 3 million people, which belongs to the upper-middle income countries group, according to the World Bank classification.

There is limited published evidence regarding the prevalence of mental disorders in Armenia with data from WHO estimating the prevalence of depressive disorders at 5.0% and of anxiety disorders at 3.5% [World Health Organisation, 2017a]. Data from Médecins Sans Frontières (MSF) suggest that, on average, 38% of Armenians would have mental health issues [Van Baelen et al., 2005]. What is obvious though, is that the country's history has been marked by tragic events, such as the 1915 Genocide, the 1988 earthquake and the armed conflict in Nagorno Karabagh, which have left deep and painful scars in the population. Through direct experience, or intergenerational effects related to their parents', grandparents' or great-grandparents' histories, these events have had a profound impact on the mental health of many Armenians. [Gasparyan, Saroyan, 2019]

With only 27.4 mental health professionals per 100,000 population (vs 271.3 in the US and 318.9 in the UK), the country lacks specialized workforce [World Health Organisation, 2017b, World Health Organisation, 2017c, World Health Organisation, 2014], and most mental health professionals are located in Yerevan. This scarcity is exacerbated by the fact that many trained psychiatrists emigrate to other countries within 5 years of completing their training. [Soghoyan et al., 2009] Moreover, as is the case in most LMICs, mental health training for primary healthcare professionals is inadequate, leaving them ill-equipped to diagnose and manage people with mental disorders [Soghoyan et al., 2009]. Furthermore, discrimination against people with mental disorders is high in the population, with data suggesting that 53% of people feel that patients with mental illness should be kept in hospital and 63% think that they are usually violent and dangerous. [Van Baelen et al., 2005]

Our intervention aimed to provide training on schizophrenia and depression to general practitioners (GPs) and nurses, in several regions of Armenia, and to evaluate its effect on their knowledge, attitudes and practices.

## 2. METHODS

The training interventions were one-day, face-to-face, interactive workshops, including didactic presentations, as well as discussions of case studies using videos from the WHO

mhGAP package and some involving local patients and psychiatrists. These workshops were conducted by Armenian psychiatrists. Schizophrenia training workshops were held in three regions (Armavir, Lori and Shirak) between October and December 2018 with 111 GPs and 167 nurses who participated. Depression training workshops were conducted in five regions (Armavir, Lori, Shirak, Syunik, and Yerevan) between June and November 2019, with 459 GPs and 197 nurses taking part.

Our evaluation had a quasi-experimental design of the before/after type: it compared data on knowledge, attitudes and practices collected before the training sessions, with data collected immediately after. Healthcare professionals taking part in the training workshops had to complete the same questionnaire just before the training and immediately after. There were however differences between the questionnaires for nurses and GPs, to reflect the differences in the content of the training. All scores have been converted to 100.

A comparison between the mean of pre- and post-training scores was conducted for nurses and GPs using Wilcoxon paired test. It was done for the total score nationally, as well as for each region and for each sub-score.

### 3. RESULTS

For schizophrenia, overall, the mean scores increased from 52.7% to 89.7% ( $p < 0.001$ ) for nurses (70.2% relative increase) and from 47.3% to 83.2% ( $p < 0.001$ ) for GPs (75.9% relative increase) (Figure 1). Differences between end-line and baseline were significant in all regions for both nurses and GPs ( $p < 0.001$ ). Whereas similar scores and increases were achieved in Armavir and Lori (nurses: 53.9% to 92.2% and 48.4% to 93.9% respectively; GPs: 45.5% to 79.3% and 41.5% to 89.4% respectively), in Tavush for both nurses and GPs, the baseline scores were higher and the change of a smaller magnitude (nurses: 55.8% to 80.8%; GPs: 57.8% to 82.4%). (Figure 1)

Sub-scores were calculated for schizophrenia knowledge, screening/diagnosis and patient management, and the improvement between end-line and baseline were significant ( $p < 0.001$ ) for each subcategory for both nurses and GPs. (Figure 2)

For depression overall, mean scores increased from 29.3% to 74.8% ( $p < 0.001$ ) for nurses (155.3% relative increase), and from 39.7% to 78.7% ( $p < 0.001$ ) for GPs (98.2% relative increase) (Figure 3). Differences between end-line and baseline were significant in all regions for both nurses and GPs ( $p < 0.001$ ) with similar baseline scores observed across all regions. The highest post-training score was reached in Lori for both nurses (86.0%) and GPs (88.0%). (Figure 3)

Sub-scores were also calculated for depression knowledge, screening/diagnosis and patient management, and the improvement between end-line and baseline were all significant ( $p < 0.001$ ) for each subcategory for both nurses and GPs. (Figure 4)

#### 4. DISCUSSION

Our analysis has shown low baseline scores for both depression (nurses: 29.3%, GPs: 39.7%) and schizophrenia (albeit slightly better; nurses: 52.7%, GPs: 47.3%). This confirms that in Armenia, primary healthcare workers might not have adequate skills to identify patients with depression or schizophrenia and manage them, as has also been shown in other LMICs [Poudiougou et al., 2021; Praherso et al., 2020; Reddy et al., 2021; Sawadogo et al., 2020; Shahif et al., 2019]. This is particularly concerning as GPs or nurses would be, in most cases, the first port of call for these patients. In particular for depression, where patients might only complain about physical symptoms when they seek care from their GP: in a study conducted in 14 countries on 5 continents, 69% of patients with major depression reported only physical symptoms as the reason for their primary care physician visit. [Simon et al., 1999]

Our study suggests that a brief training intervention on schizophrenia and depression for GPs and nurses can result in significant improvements in knowledge, attitudes and practices.

Interventions to improve mental health literacy of primary health care workers in other LMICs have achieved similarly positive results [Nimgaonkar et al., 2015; Poudiougou et al., 2021; Shiva et al., 2021].

Whether the improvements in knowledge, attitudes and practices, assessed immediately after the training in our study, were sustained over time remains to be seen. A 6-18 months post-intervention survey was planned to evaluate this specific point. The plan was also to survey local psychiatrists and assess whether a greater number of patients with schizophrenia or depression had been referred to them since the training. Unfortunately, due to the Covid 19 pandemic, and subsequently to the reignited war in Nagorno Karabagh, these surveys couldn't be conducted. Anecdotally though, local psychiatrists have reported that following the training, they have seen a greater number of patients with schizophrenia or depression being referred to them, suggesting that the training received by GPs and nurses has been put into practice.

## 5. CONCLUSION

Given the current mental health treatment gap in LMICs, brief mental health training interventions for primary healthcare workers, based on the WHO mhGAP package, would help improve mental health services, and result in better diagnosis and management of mental disorders.

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FIGURES:

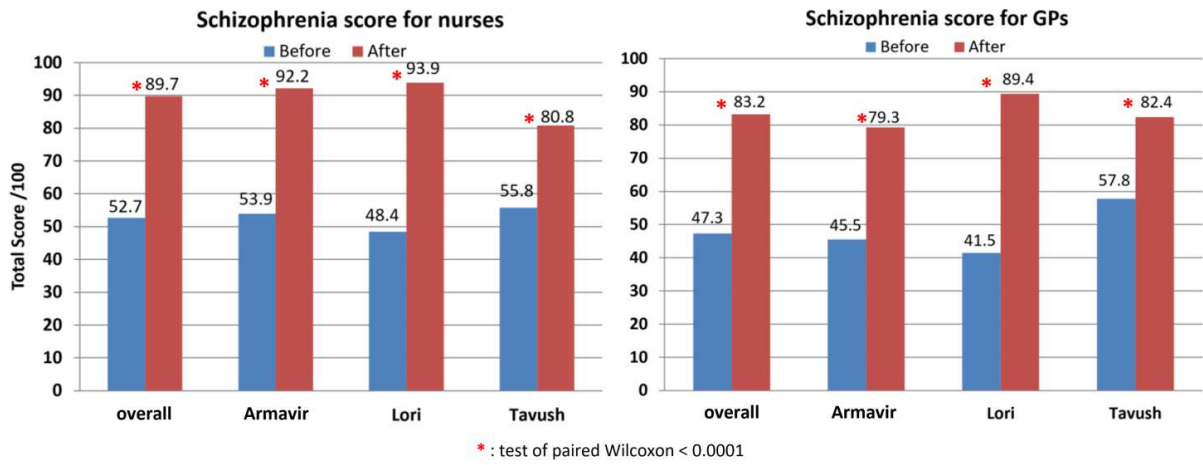


Figure 1: Mean scores pre- and post-training for schizophrenia – Overall and in each region

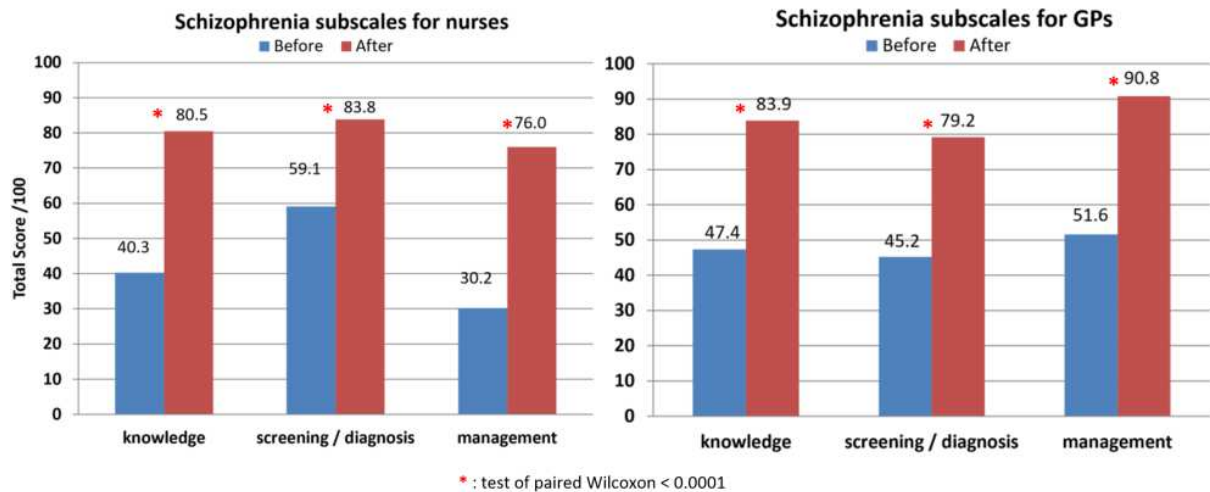


Figure 2: Sub scores pre- and post-training for schizophrenia

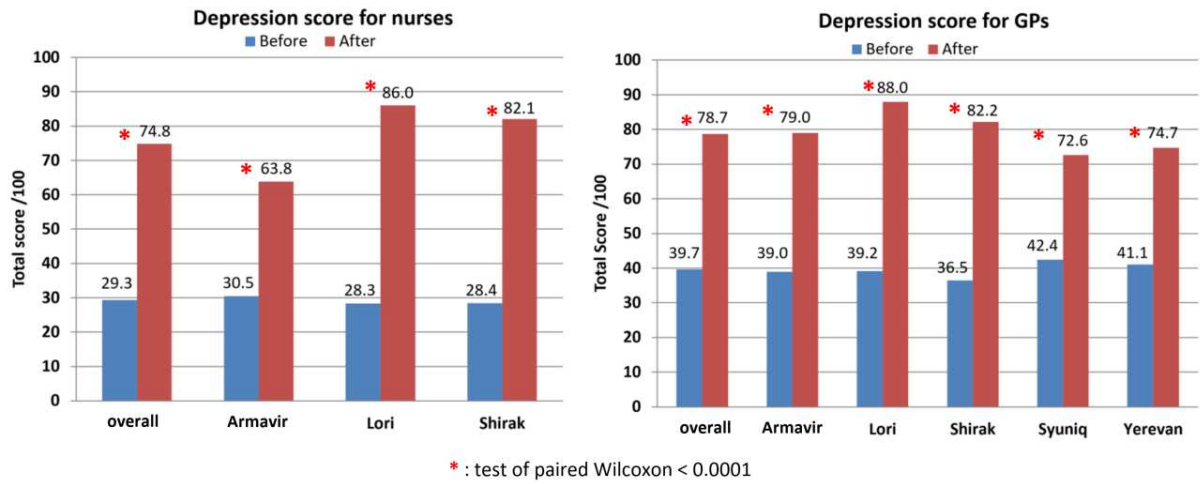


Figure 3: Mean scores pre- and post-training for depression - Overall and in each region

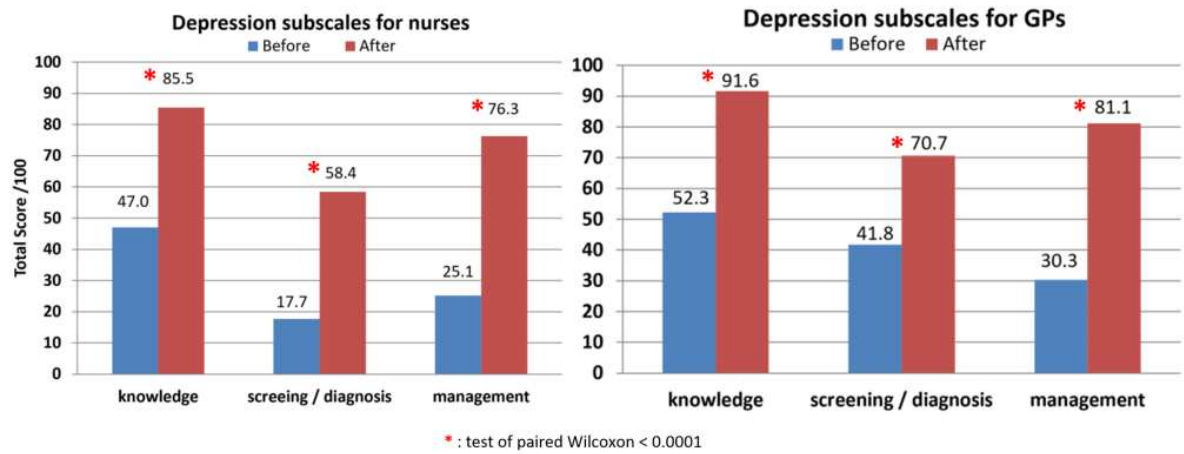


Figure 4: Sub scores pre- and post-training for depression