

# Self-recorded stress levels for general practitioners before and after forming an out-of-hours primary care centre

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## SUMMARY

*The Nottingham Stress-Arousal Checklist (SACL) was used to compare stress and arousal levels within a group of 36 Scottish general practitioners (GPs) before and after an out-of-hours primary care centre opened in 1995. Overall, GPs reported significantly lower stress and higher arousal scores with the new service.*

**Keywords:** stress; general practitioners; out of hours.

## Introduction

THE out-of-hours deal of September 1995 encouraged the development of centre-based out-of-hours cooperatives.<sup>1</sup> GPs, increasingly unhappy about providing out-of-hours care, saw them as the preferred model to manage increasing and sometimes inappropriate patient demand.<sup>2,3</sup>

Stressors affecting GPs are well-documented, with night calls (especially for older doctors), emergencies during surgery hours, and telephone interruptions to family life commonly cited as important sources of stress.<sup>4</sup> Longitudinal studies suggest that in recent years GPs are experiencing increased stress, less job satisfaction, and poorer mental health.<sup>5</sup>

## Method

Esk Valley Emergency Services (EVES), based in semi-rural Midlothian, involves eight practices, 36 GPs and 58 000 patients; there were seven on-call rotas before EVES opened. EVES has reception, nursing and driving staff, with two GPs covering evenings and weekends (one from midnight). During the last three weeks of the old system, and again exactly one year later in March 1996, doctors completed an 'end of day' sheet. This involved:

- Recording their on-call status and providing a summary of their daytime activities
- Using a five-point Likert scale to record their stress levels over the past 24 hours, and whether work had impinged on family life or social life
- Completing a Nottingham Stress Arousal Check List (SACL) adapted by Porter *et al.*<sup>6</sup>

Doctors were requested to complete this sheet at 6 pm or at the end of their working day, but to exclude off-duty periods. The SACL is a list of 25 adjectives describing different feelings and

moods, grouped into four categories: positive and negative stressors and arousers. Responses are scored to produce stress and arousal scores. The unit of analysis is a day. Chi-squares are used to compare the descriptive statistics in the first and second periods. The computed stress and arousal scores are compared by analysis of variance.

## Results

Twenty-four (67%) of the 36 eligible GPs returned forms in 1995 and 23 (61%) in 1996. However, only 16 responses (44%) were matched over the two periods. This was partly due to changes within partnerships but was also because one large practice returned forms anonymized.

The average daytime hours worked were identical in both years. GPs reported they were on call 'last night' 71 times (15%) in 1995 and 40 times (8%) in 1996; they reported being on call 'tonight' 60 times (12%) in 1995 and 30 times (6%) in 1996. In 1996, doctors were less likely than in 1995 to report subjective stress or to indicate that their working life had imposed on family or social life ( $P < 0.0001$  in both cases).

Table 1 compares SACL stress and arousal levels for all responses and for the sub-group of matched doctors who had completed forms in both periods. The overall average stress score dropped significantly and the overall average arousal score rose significantly between 1995 and 1996. These findings were replicated for matched responses.

In 1995, stress levels were significantly higher for working days before a night on call than for working days with no out-of-hours duties, whereas arousal levels were lower after a night on call. In 1996, there was no association between on-call arrangements and stress or arousal scores. Fourteen of the sixteen matched GPs were less stressed in 1996 than in 1995, and in seven of these fourteen the difference in stress was significant (although the  $n$  value per GP was a maximum of 21 in each time period and was usually less than this). The other two GPs were more stressed, though not significantly so. Eleven GPs were more aroused in 1996 than in 1995 (four significantly) and five were less aroused (one significantly).

## Discussion

Clearly, overall stress levels decreased and arousal levels increased in this study. Because any given doctor is likely to respond in a similar way across the two time periods, the analysis of matched responders was important. While the proportion of doctors we were able to match was low, their results are consistent with those of the overall group and with previous work in Lothian.<sup>6</sup> This allows some confidence in the robustness of our findings.

These results suggest that out-of-hours cooperatives may alleviate stress and this is an important finding for GPs. However, it is important that these changes benefit patients too. While the literature suggests that a less stressed and more aroused GP should provide a better service,<sup>4-6</sup> more work is required to assess the impact of cooperatives both on those patients who contact doctors out of hours and on those who attend during the day.

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**Table 1.** Comparison of stress and arousal levels before and after introduction of EVES, for all GPs and for matched GPs, by on-call status.

	1995	1996	1995 versus 1996 P-value
<i>Stress</i>			
All GPs			
All nights	4.5	2.9	0.0000
Not on last night	3.8	2.8	0.0050
On last night	4.7	3.4	0.0672
On tonight	6.8	3.3	0.0061
P-value (not on versus on last night)	0.0943	0.3346	
P-value (not on versus on tonight)	0.0000	0.4322	
Matched GPs			
All nights	4.9	3.2	0.0000
Not on last night	4.2	3.0	0.0039
On last night	4.8	3.9	0.3425
On tonight	7.2	4.2	0.0029
P-value (not on versus on last night)	0.4201	0.1486	
P-value (not on versus on tonight)	0.0001	0.1478	
<i>Arousal</i>			
All GPs			
All nights	4.6	5.7	0.0000
Not on last night	5.5	5.7	0.6202
On last night	2.8	6.2	0.0000
On tonight	4.1	5.8	0.0383
P-value (not on versus on last night)	0.0000	0.4658	
P-value (not on versus on tonight)	0.0105	0.8328	
Matched GPs			
All nights	4.8	5.7	0.0103
Not on last night	5.7	5.7	0.9067
On last night	3.4	6.3	0.0003
On tonight	3.7	5.8	0.0227
P-value (not on versus on last night)	0.0001	0.3861	
P-value (not on versus on tonight)	0.0009	0.8897	

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