Training and supervision needs and experience: a longitudinal, cross-sectional survey of accident and emergency department senior house officers

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Summary

The aim of this study was to investigate senior house officers' (SHOs) perceptions about their training needs, satisfaction with teaching and supervision, and the relationship this has with psychological distress levels. All 171 SHOs employed within 27 accident and emergency (A&E) departments in the South Thames region were sent questionnaires at the start of their attachments in A&E, at the end of months four and six. The questionnaires asked SHOs to rate on visual analogue scales their perceived need for further training for 23 clinical and practical activities relevant to A&E practice. At the end of the fourth month SHOs were asked to indicate who had provided them with the most valuable teaching and supervision, indicate their satisfaction levels with training received, and suggest ways to improve teaching and supervision. SHOs' psychological distress levels were measured in all three questionnaires.

Overall, satisfaction with supervision and training was mixed. SHOs perceived greatest need for further training in areas encountered less frequently in A&E. Registrars were the most valued providers of supervision and teaching. Increased numbers of middle grade staff and protected study time were suggested as ways to improve supervision and teaching. SHOs with higher scores for training need at the end of their attachment in A&E expressed significantly less satisfaction with training and higher psychological distress levels. The variation between SHOs' perceptions of training needs indicates the importance of tailoring training and supervision to individual requirements.

Keywords: training; accident and emergency medicine; senior house officers; psychological stress

Several initiatives to improve senior house officers' (SHOs) education and training have been introduced. *Working for patients* established protected funding and an education contract between postgraduate deans and local clinical tutors¹; the General Medical Council's *Revised recommendations on general clinical training* stressed the need for protected time for formal education, reduction of inappropriate duties and adequate supervision²; and all posts

should conform to the requirements of *Junior doctors: the new deal*.³

Ideally, junior doctors should be treated as adult learners and receive individually tailored educational programmes that take account of previous experience,⁴ but many factors mitigate against this.⁵ In a study of 64 SHOs and registrars in general and/or geriatric medicine, 75% wanted a greater amount of formal education.⁶ In a more recent study of SHOs from 17 specialties, it was found that lack of dedicated teaching time was the single most common complaint, and only 42 (4%) of the doctors interviewed had an agreed job plan with attention to individual requirements.⁷

Accident and emergency (A&E) medicine is a particularly demanding area of hospital practice, with SHOs frequently working long hours. The need to provide 24 hour cover poses particular difficulties for the provision of training to A&E SHOs, and it has frequently been reported that there is a need for improvement.^{8–12} In a survey of one large London A&E department the management of up to one in 10 patients was considered to be 'poor'.¹³ However, there has been little attempt to investigate the specific training needs that A&E SHOs themselves perceive. The main aim of this study was to investigate these training needs and how they vary between the start and end of SHOs' training attachments. SHOs' satisfaction with teaching and supervision, and their psychological distress levels were also measured and the relationships between these factors and training needs were investigated. This study was part of a more extensive longitudinal, cross-sectional analysis of A&E SHOs' work experience in the South Thames region, other parts of which have been presented elsewhere.¹⁴

Methods

The sample included all 171 SHOs employed in 27 A&E departments in the South Thames Region from August 1994 to February 1995. Questionnaires were sent to each SHO at the start, end of their first month, mid-point and end of their employment in A&E. Full details of the method have been reported elsewhere.¹⁴

SHOs were asked to indicate their career intentions in the questionnaires at the start and end of their A&E attachment. Questionnaires sent at the end of the fourth month asked SHOs to rank who provided them with the

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most valuable teaching in A&E and the most valuable supervision. The list included consultant, associate specialist/staff grade, senior registrar/registrar, on-call registrar, peers (SHOs), clinical assistants, nursing staff, and others. SHOs were also asked to tick response boxes to two questions: "How satisfied are you overall with the supervision you have received so far?" and "How satisfied are you overall with the teaching you have received so far?" (answers ranged from 6=very satisfied, to 1=very dissatisfied). In questionnaires sent at the end of their attachments SHOs were asked to indicate "How satisfied are you overall with the training that you have received in this A&E department?"

In questionnaires sent at the start and end of their attachments, SHOs were asked to indicate on 100 mm visual analogue scales how much further training they would like to receive for 23 A&E clinical and practical activities (0=no training wanted, 100=extensive training wanted). These activities were chosen to reflect a cross-section of the types of patient presentation and technical procedures SHOs are likely to encounter in A&E.

Questionnaires sent at the start, end of the fourth month and end of training included a psychological distress questionnaire,¹⁴ consisting of 25 items (14 negatively worded and 11 positively worded): 21 items were modified from the mental health inventory¹⁵ and four from the 28-item general health questionnaire.¹⁶ Scoring was on a six-point scale. For analysis, scores were reversed for negatively worded items so that for all ratings: 1=lowest distress and 6=highest distress. The overall mean score for all completed items was calculated for each subject.

Results

The response rates to questionnaires sent at the start, end of the fourth month, and end of employment in A&E were 82% (140 respondents), 64% (110) and 67% (115), respectively. The mean age of the SHO sample was 26.5 (range 23.7 to 35.7) years. SHO career intentions are presented in table 1.

Table 1 Career intentions of the SHOs at the start and end of their A&E attachment

A&E SHO career intentions	Start of training (%) (n=135)	End of training (%) (n=107)
General practice	25	23
Medicine	27	26
Surgery	16	15
Anaesthetics	10	12
Orthopaedics	9	8
A&E medicine	5	7
Radiology	4	1
Psychiatry	4	6
Paediatrics	4	4
Obstetrics & gynaecology	3	3
Cardiology	3	1
Ophthalmology	2	2
Oncology	1	1
Do not know	9	5

Table 2 SHOs' views about who in their department provided the most valuable supervision and teaching. Figures are given as percentages with the actual number in parentheses

Medical/nursing staff	Provision of best supervision	Provision of best teaching
Senior registrar/registrar	29 (35)	32(33)
Consultants	20 (24)	23(24)
Associate specialist/staff grade	17.5(21)	18(19)
Peers (SHOs)	17.5(21)	15(15)
On-call registrar	7 (8)	6(6)
Nursing staff	7 (8)	3(3)
Other	2 (2)	3(3)

SUPERVISION

Senior registrars, registrars, associate specialists and staff grades were perceived as giving the most valuable supervision by almost half the respondents, while only 23% felt that this was provided by a consultant (table 2). Twenty-one (17.5%) felt that their peers provided the most valuable supervision. Overall satisfaction levels were high with 71% (80) of SHOs stating that they were satisfied or very satisfied with the supervision they received; 15% (17) were unsure, and only 14% (15) reported being dissatisfied or very dissatisfied.

Several ways for improving supervision were suggested: increase middle-grade cover (45%); increase feedback from other members of the A&E team (8%); increase presence of consultant in the department (5%); and the provision of more teaching (3%). Eighteen (16%) respondents felt that the supervision provided was already good, and that there was no need for change. Other responses included the need for more feedback for things done well, rather than just when mistakes had occurred.

TRAINING NEEDS

Table 3 shows the median and inter-quartile range for SHOs' perceptions of their training needs at the start and end of the period in relation to the 23 clinical and practical activities tested. The results of Wilcoxon tests showed that for 19 of the 23 items there was a significant decrease in perceived need for training over time. Areas where training need remained at or above a score of 50 (0=lowest, 100=highest) included inserting a central venous line, eye injuries, intubation, interpreting X-rays, plastering, and consulting with sick children.

Wilcoxon tests were carried out to investigate whether there was an association between career intentions and perception of training needs. While some differences emerged, there was no consistent pattern. For example, those intent on surgical careers expressed significantly higher training needs for inserting a central venous line ($z=-2.23$, $p < 0.05$, medians: 70/65) and defibrillation ($z=-3.15$, $p < 0.001$, medians 60/50) and less need for experience in plastering ($z=-2.92$, $p < 0.01$, medians 70/80).

The majority of SHOs felt that middle-grade doctors gave them the most valuable teaching, while one in four felt that this was provided by consultants (table 2). Regular X-ray teaching

Table 3 SHO training needs ratings and results of Wilcoxon tests for dealing with a range of A&E activities at the start and end of A&E training (0=lowest 100=highest)

Clinical area/problems	Start of training			End of training			n
	Median	25%	75%	Median	25%	75%	
Wound management	60	50	71	40.0**	22	55	104
Eye injuries	81.5	70	90	50.0**	31	70	103
Inserting CVP line	67	47.8	80	70	40	81	104
Intubation	71	62	90	67.5**	50	80	105
Suturing	40	23.4	55.5	20.0**	8.5	30	101
Interpret X-ray	75	61.3	89	50.0**	30	65	101
Fracture dislocations	85	72.5	92	40.0**	20	64.3	102
Reading ECGs	60	40	77	41.5	8	39	103
Risk of SHO infection by patients	23	10	48.8	15	5	37.5	104
Defibrillation	51	30	70	24.0**	10	59	104
Plastering	76.5	59.3	86.3	59.5**	30	78.8	101
Referral to on-call teams	29	12.3	50	13.0**	5	25	102
Referral to primary care or community	32	15	50	21.0**	10	35	103
Caring elderly	30	16	50	20.0*	10	40	105
Consulting with drunk/abusive patients	44.5	25	57.5	20.0**	6	30	101
Talking re: sex problems	33.5	20	50	20.0**	8.8	35.3	102
Intimate examinations	35	15.3	59	11	6	27.8	101
Sharing uncertainty about diagnoses	34	20	51	20.0**	10	34	104
Telling patient you don't know	23	10	46	19.0**	10	30	103
Consulting with psychiatric patients	50	32	70	32.0**	20	58.5	103
Consulting with sick children	78.5	60	85.3	50.5**	30	70	95
Consulting with dying patients	34	20	54	30	12	53	100
Talking to relatives	20	10	43	17.0**	10	30.8	105

CVP, central venous puncture

*p<0.05, **p<0.001.

was very common, and 90% had some form of X-ray teaching during the 6-month period.

TRAINING NEEDS AND SATISFACTION

At the end of their fourth month of employment in A&E, 60% (64) of SHOs were satisfied or very satisfied with the teaching they had received, 22% (23) were unsure and 18% (20) were either dissatisfied or very dissatisfied. The most frequently mentioned way in which teaching could be improved was by making more protected time available for study and learning. Other responses included the need for senior back-up at all times (especially outside office hours), nurse practitioners, more teaching sessions, availability of courses (such as ATLS, ACLS), and the provision of more feedback.

The scores given on the training needs scales at the end of month 6 were summed and a mean overall score for each SHO was calculated. Subjects were divided at the median and Mann-Whitney U tests were carried out with satisfaction for teaching, supervision and overall training received. There were no significant differences between groups for satisfaction with teaching and supervision. However, there was an inverse relationship between training need score and satisfaction score (medians: 4.0/4.0; quartiles: 25%, 4.0/2.0, 75%, 5.0/4.0; $Z=-4.12$, $p<0.001$).

PSYCHOLOGICAL STRESS SCORE AND TRAINING NEEDS

SHOs' psychological stress scores showed little variation over time. The medians and quartiles of the stress scores at the start, end of the first month, fourth and sixth month were: 2.4 (25% 2.06, 75% 2.9); 2.4 (25% 2.08, 75% 2.8); 2.4 (25% 2.08, 75% 2.9); 2.4 (25% 2.04, 75% 2.8), respectively.

Mann-Whitney U tests were carried out between median training need scores and stress

scores. SHOs with training needs scores that were above the median at the end of month 6 tended to have had higher psychological distress scores, at the end of both month 1 (medians 2.3/2.6; quartiles 25% 2.0/2.2, 75% 2.8/3.0; $Z=-1.94$, $p<0.05$) and month 4 (medians 2.2/2.5; quartiles 25% 1.9/2.1, 75% 2.7/3.0; $Z=-2.07$, $p<0.05$).

Discussion

This is the first study to assess A&E SHOs' perceptions of their training needs over time and to relate this to aspects of job satisfaction and psychological well-being. The activities for which SHOs perceived high levels of training need early in their employment appeared to relate to subjects not usually encountered during house jobs (such as eye injuries, fractures/dislocations, sick children). Those for which training needs were still high at the end of the six-month period related to activities infrequently encountered in A&E, but which have a profound impact if performed badly (eg, intubation, inserting a central line).

The association between levels of training need and psychological distress scores supports the importance of assessing SHOs' individual training needs during their attachments in A&E departments and of providing additional training and support in areas where extra practice or tuition is felt to be needed.

The most frequently mentioned way to improve teaching put forward by the SHOs in this study was to have more protected time for study and learning. To some extent this may have already been met by recent improvements in the amount of protected teaching offered to SHOs. Greater middle-grade cover was the most commonly expressed means of improving supervision and training.

We have previously shown that despite a significant increase in SHOs' confidence for carrying out a range of activities over their 6 months employment, there were several areas where confidence remained low.¹⁴ Whilst many of these correspond with activities identified as being associated with higher levels of training need, others related to topics where the perception of need for training was low both at the beginning and end of their attachment (eg, caring for elderly, sharing uncertainty with patients, and consulting with dying patients).

The difference between the features of consultations that we previously found to be causing the same SHOs greatest difficulty¹⁷ and their perception of training needs described here is noteworthy. Among the most frequent types of presentation reported as causing difficulty during consultations were problems relating to primary care type presentations and communication difficulties (eg, dealing with demanding, manipulative, violent or aggressive patients, having a conflict of view with the patient about the diagnosis/seriousness of their condition).¹⁷ SHOs, though, appeared to place a low priority on receiving training to improve skills for managing such patients. This may

reflect the controversy that still surrounds the role of the A&E department as a primary care provider.

This study found an overall reduction in the training needs of A&E SHOs over time. Whilst this may indicate the general effectiveness of their training and experience in A&E, it was clear that there is also considerable variation in SHOs' perceptions of training need and their satisfaction with the supervision they receive. The findings support the importance of tailoring training programmes to meeting the individual needs of SHOs.^{18 19} The training guide book produced by the British Association for Accident and Emergency Medicine may provide a useful starting point from which to make assessments of each SHO's needs.²⁰ However, such training is only likely to be possible in departments that have adequate staffing levels and middle-grade cover.

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