**Introduction**

- Blood pressure measurement is an essential clinical skill. It is important that staff performing this procedure have a full understanding and perform the procedure correctly, taking accurate readings.
- Informal discussion with staff identified variable understanding of how to measure postural hypotension – a commonly requested test, which is performed by junior nursing staff.
- The lying and standing blood pressure (L/S BP) measurement guide, published by the Royal College of Physicians in January 2017, provides guidelines informing clinical teams how to accurately measure L/S BP with a view of reducing patients risk of falls (Fig. 1).

**Aims**

- We aimed to investigate the self-efficacy and competence of medical ward nursing staff and healthcare assistants in performing the L/S BP procedure.
- To review if an educational session could improve staff knowledge and clinical practice of L/S BP procedure.
- To initiate an education programme of L/S BP procedure in clinical training for nursing staff and healthcare assistants.

**Methods**

- Data were collected from a small cohort of healthcare assistants and nursing staff working on an acute medical unit (n = 25), using a six-item questionnaire (Table 1).
- An education session was then provided, including a short video on how to measure L/S BP, thus blood pressure.
- Staff were tested before and after the education session.
- All participants then completed subsequent questionnaires 1 week and then 4 months, after the education session.
- Scores obtained from these tests were assessed and analysed in statistical software SPSS and statically tests using paired t-test and Chi-squared test.

**Results / Outcomes**

- Prior to the education, self-efficacy in the ability to perform L/S BP testing correctly was high among all staff (80%). However, knowledge of the test was poor, with only 50% of the procedural questions answered correctly prior to education.
- Post education testing showed significant improvement in correctly answering all individual questions (Fig. 2).
- Furthermore, significant improvement in overall scores of the questionnaires occurred 1 week after the education session (97%, p<0.01), which was largely maintained after 4 months (87%, p<0.01) compared to prior to education (Fig. 3).
- There was no significant difference between the questionnaire scores at 1 week and 4 months (Fig. 2 + 3).
- Discussion groups identified a lack of training for healthcare assistants and confusion regarding guidelines.

**Conclusion**

- Participants had rated high self-efficacy in their ability to measure L/S BP correctly when asked, however, when tested, knowledge and understanding of the L/S BP procedure was poor.
- A single educational session on L/S BP measurements significantly improved knowledge and understanding of performing L/S BP procedure. Furthermore, this knowledge was retained at 4 months follow-up.
- In keeping with previous publications, this highlights the need to test knowledge rather than only ask about competence (2,3).
- The L/S BP presentation created for this study has now been cascaded Trust-wide, being used as part of training for new healthcare assistants and ward-based workshops.
- Feedback collected from this study has also lead to the production of guides, which are now attached to BP machines and patients’ boards, in addition to staff lanyards – thus helping to ensure safe care with reliable measurements.

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**Table 1. Questions included in the Lying and Standing Blood Pressure Questionnaire.**

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Score</th>
<th>Pre-education</th>
<th>Post-education (1 wk)</th>
<th>Post-education (4 mths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 (01)</td>
<td>How confident do you feel when asked to perform a lying blood pressure on a patient? (0 = no confidence to 5 = full confidence performing this correctly).</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Q2 (02)</td>
<td>How long would you allow your patient to lay flat and rest prior to performing a lying blood pressure?</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Q3 (03)</td>
<td>Upon the patient standing or sitting up from the lying position when would the first standing blood pressure measurement be performed?</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Q4 (04)</td>
<td>At what time would a second standing BP measurement be taken?</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Q5 (05)</td>
<td>What alteration can be made to the lying blood pressure procedure if the patient is unable to stand?</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Q6 (06)</td>
<td>What decrease in the systolic BP is associated with a positive result in the lying blood pressure?</td>
<td>1</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

**Figure 1:** The lying and standing blood pressure measurement guide published by the Royal College of Physicians in January 2017 and backed by the British Geriatric Society.

**Figure 2:** The percentage of correctly answered questions from the lying and standing blood pressure questionnaire at each point. Significant improvement of score post education was seen for each question. Scores appeared to remain high at the 4 month follow up.

**Figure 3:** Mean overall score of the L/S BP questionnaire at each of the test stages. Significant improvement of scores seen post education (P<0.01) at both test stages, with no significant drop in score observed at the 4 month follow up.

**References**