A retrospective study of return to work following surgery

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Background Sickness absence following surgery accounts for significant periods of sickness absence from employment. The duration of absence following two surgical procedures: benign abdominal hysterectomy (BAH) and Birmingham hip resurfacing (BHR) was explored.

Aim To identify what advice patients who had undergone BAH or BHR surgery were given regarding their likely sickness absence duration and to compare this with their reported absence duration.

Method In all, 453 patients who had undergone BAH or BHR surgery during 2004 were contacted by postal questionnaire and the results were statistically analysed.

Results The advice given to patients to refrain from work varied from 4 weeks to >15 weeks for BAH surgery which was inconsistent with evidence-based guidance provided by the Department of Work and Pensions. The advice for BHR varied from <4 weeks to >15 weeks. Advice given by health care professionals appeared to have the greatest influence on return to work times with patients tending to adhere to any advice that is given irrespective of its duration. Twenty-two (29%) BAH patients and thirty-six (43%) BHR patients reported that their employers provided temporary work modifications when they returned to work; however, this support appeared to have no effect on their sickness absence duration.

Conclusion Health care professional advice regarding expected sickness absence duration influenced absence duration. The awareness and use of more consistent evidence-based guidance may be beneficial for all involved in this process.

Key words Hip surgery; hysterectomy; return to work; sickness absence duration.

Introduction

Employers and managers frequently comment that the duration of an employee's post-operative sickness absence can be extremely variable, and that there is little available guidance to help them predict and plan how long such absences may be. Boudrez and De Backer [1] suggested that health care professionals should emphasize return to work expectations during hospitalization, and the Department of Work and Pensions (DWP) in UK has produced evidence-based guidance for clinicians regarding expected recovery times following some common surgical procedures, although the awareness of such guidance may be limited [2]. It is becoming increasingly recognized that the use of rehabilitation programmes can assist employees return to work following a period of absence [3]; however, the lack of consistency as to the likely post-operative recovery time following surgery can result in confusion for the patient, the employer and the health care professionals involved.

Two relatively common surgical procedures that are known to cause significant absence from work were selected for this study. These were benign abdominal hysterectomy (BAH) and Birmingham hip resurfacing (BHR). Phase I of our study, reported here, is a retrospective analysis of the advice given to patients undergoing these procedures within two hospitals in the West Midlands. The advice was compared with the stated duration of absence from work of each patient.

Abdominal hysterectomy

A hysterectomy may be performed for menorrhagia, dysmenorrhoea, fibroids, endometriosis, adhesions or pelvic growths. The growths may be benign or malignant. In some cases where the uterus is small, it may be possible...
for a vaginal hysterectomy to be undertaken rather than an abdominal one thereby avoiding the need to cut the abdominal musculature. For the purpose of this study, it was decided to review only BAH.

**Birmingham hip resurfacing**

BHR is a type of hip replacement which replaces the two surfaces of the hip joint. The procedure helps to conserve bone more than a total hip replacement by retaining the head of the femur and in some orthopaedic centres is therefore a preferred option for the younger patient who may still be in employment. The head is shaped to accept an anatomically sized metal sphere and unlike the total hip replacement there is no large stem to go down the central part of the femur. The surface of the acetabulum (the socket) is also replaced with a metal implant, which is fitted directly into the bone. The resurfacing components are made of ‘cast’ cobalt chrome which are finely machined to produce a very high-quality surface with a low friction finish, hence low wear. As the procedure has only been regularly undertaken over the last 10 years, there is little evidence as to the long-term outcomes of this intervention; however, should the procedure fail it is possible to proceed to a total hip replacement at a later date.

**Method**

Ethical approval was obtained. The study population comprised hysterectomy patients treated at Sandwell and West Birmingham Hospital’s National Health Service (NHS) Trust and hip resurfacing patients treated at the Birmingham Royal Orthopaedic Hospital NHS Trust between 1 January and 31 December 2004.

Specific definitions for the concepts of ‘work’, ‘return to work’ and ‘sickness absence duration’ were developed as were definitions relating to description of physical labour (Table 1). These definitions are used throughout this paper.

A postal questionnaire designed to measure the impact of specific variables on absence duration following surgery was developed. This was peer reviewed and piloted, and included variables such as age, employment status, work sector, shift work, mode of transport to work, physical nature of work, availability of workplace adjustments and advice received regarding expected absence duration.

Each hospital database was used to identify patients who had undergone surgery during the study period. The study inclusion criteria required them to be aged <64 years and be in paid employment for a minimum of 20 h per week (or be self-employed working for a minimum of 20 h per week) at the date of surgery. As it proved difficult to identify employment details from the records, details of the study were sent to all patients aged below 64, even though they may not have been in employment.

**Table 1. Definitions of terminology**

<table>
<thead>
<tr>
<th>Work</th>
<th>Refers to the patient’s current employment whether that is as a self-employed person or a waged employee</th>
</tr>
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<tbody>
<tr>
<td>Return to work</td>
<td>Refers to the patient’s return to his/her substantive employment (the job they are normally currently employed to do) or to temporary redeployment to other duties within the same organization as part of a phased return to work programme</td>
</tr>
<tr>
<td>Sickness absence duration</td>
<td>Refers to the period, counted in days and rounded up to the nearest complete day, from the first post-operative day to the date of first return to substantive employment, whether that date is return to full-time work or as part of a phased return to work programme</td>
</tr>
<tr>
<td>Heavy manual work</td>
<td>Job requires participant to lift/carry &gt;10 lbs in weight throughout a shift or working day</td>
</tr>
<tr>
<td>Light manual work</td>
<td>Job requires participant to lift/carry &lt;10 lbs in weight throughout a shift or working day</td>
</tr>
</tbody>
</table>

Patients were contacted ~9 months after surgery and having first been sent an information leaflet were asked to provide informed consent to participate. Nine months was chosen as it was estimated that all patients should have then reached a plateau in terms of their treatment and return to work. One postal reminder was sent to those who had not responded after 2 weeks. Information from the questionnaire was then collated and analysed using chi-square statistical tests and Kaplan–Meier survival curves generated from Minitab 14 software.

**Results**

The results for the two surgical procedures are presented separately.

**Benign abdominal hysterectomy**

In all, 217 patients underwent BAH surgery at Sandwell and West Birmingham Hospital during 2004. Of these 75 (39%) agreed to participate in the study. The medical records of the BAH non-responders were later reviewed and it appeared that 60 (42%) of them may have not been in employment or were retired. In accordance with the protocol this meant the response rate was actually 48%.

Seventy-one (95%) of the BAH patients who responded had returned to work at the date of response. The age range of the BAH cohort was 29–64 years, (median 46 years). Median sickness absence duration among those who had returned to work (n = 71) following BAH was 94 days (range 23–293 days). There was no
significant difference in absence duration between the public sector \((n = 28)\), with a median of 98 days (range 37–293 days) compared to the private sector \((n = 43)\), median 92 days (range 23–214 days). Comparison of Kaplan–Meier survival curves: chi-square 0.737, df 1, \(P = 0.391\). Only one person was self-employed, therefore no comparisons could be made for this employment group.

Comparison of Kaplan–Meier survival curves for the degree of physical labour revealed a significant impact upon sickness absence duration, as outlined in Figure 1. Chi-square 5.99, df 2, \(P = 0.05\).

Sixty-one patients (81%) reported that they had been given an indication of how long they should refrain from work by their health care practitioner. Thirteen patients (17%) reported that they had not received advice and one patient (1%) failed to respond. Patients in receipt of advice returned to work sooner, median 89 days (range 23–293 days), than those who did not, median 122 days (range 34–214 days). Comparison of Kaplan–Meier survival curves: chi-square 3.68, df 1, \(P = 0.06\).

Table 2 highlights the variety of advice given to patients compared to their reported absence durations. One self-employed person \((n = 1)\) returned to work at 143 days and reported that she had not been given advice.

Sixty-seven patients (90%) received sick pay either as company or statutory sick pay. There was no significant difference in the sickness absence duration between those who received company sick pay \((n = 48)\), range 23–293 days (median 90 days), compared to those receiving statutory sick pay \((n = 19)\), range 62–185 days (median 95 days). Comparison of Kaplan–Meier survival curves: chi-square 2.40, df 1, \(P = 0.12\).

Thirty-nine (52%) of respondents reported delays in their return to work. Fifteen patients reported pain/discomfort, six feelings of fear and three infections, as single delaying factors. Twenty-four patients reported ‘multiple’ delaying factors in a variety of combinations which included feelings of fear, anxiety and depression and ‘other non-health-related reasons’ such as employer expectations.

Twenty-two patients (29%) reported that their employer assisted their return to work through the provision of temporary work modifications including shorter hours and modified duties; however, this appeared to have no impact on sickness absence duration, chi-square 0.37, df 1, \(P = 0.54\).

Eleven patients who had undergone BAH described their work as heavy manual and all of these indicated that they had returned to their substantive employment.

**Birmingham hip resurfacing**

In all, 236 patients had undergone BHR surgery at the Royal Orthopaedic Hospital during 2004, of which 84 (41%) agreed to participate.Unlike the BAH cohort it was impossible to identify whether the non-responders were unemployed or not. Sixty-eight patients (81%) from the BHR group had returned to work by the date of response. Of the 84 responding, 54 (64%) were males and 30 (36%) were females. The median age was 51 years (range 30–65 years) and for females 52 years (range 30–62 years).

Median sickness absence duration among those who had returned to work \((n = 68)\) following BHR was 90 days (range 24–357). The median absence duration for males was 88 days (range 24–179) which was shorter than the females, 101 days (range 39–162); however, it was not significant. Comparison of Kaplan–Meier survival curves: chi-square 0.52, df 1, \(P = 0.47\).

**Figure 1.** BAH—effect of physical labour on absence duration. \(P = 0.05\).
Thirteen patients (16%) were self-employed of which one had not returned to work. Seventy-one patients (84%) were employed by companies or organizations and fifteen (21%) of these had not returned to work. The median sickness absence duration was significantly shorter among self-employed patients, 61 days (range 24–17), compared to 101 days (range 25–179) for those employed by companies or organizations (Figure 2). Comparison of Kaplan–Meier survival curves: chi-square 6.54, df 1, \( P < 0.01 \).

Among the seventy-one patients employed by companies or organizations, 36 worked in the public sector, 30 in the private sector, 1 was a charity worker and 4 failed to indicate which sector. Those working in the public sector returned to work significantly sooner, median 87 days (range 25–145) than those in the private sector, median 108 days (range 38–179 days). Comparison of Kaplan–Meier survival curves: chi-square 4.18, df 1, \( P = 0.04 \).

The degree of physical labour did significantly affect sickness absence duration as outlined in Figure 3. The median duration of sickness absence for heavy manual work was 129 days (range 39–161), compared with 94 days (range 39–179) for light manual work and 86 days (range 24–162), for office work. Comparison of Kaplan–Meier survival curves: chi-square 7.52, df 1, \( P < 0.05 \).

Sixty-six (79%) BHR participants reported that they had been advised how long to remain off work post-operatively although whether this had been given or not, did not significantly impact on the absence duration. Chi-square 0.63, df 1, \( P = 0.43 \). The range of advice given by health care professionals to patients is outlined in Table 3. The reported absence duration appeared to correspond with the advice that was given by the health care professional.

Seventy (83%) patients received sick pay and of these 14 had not returned to work. Forty-seven patients in receipt of company sick pay had returned to work with a median sickness absence of 89 days, range 25–179 days whereas the nine returnees receiving statutory sick pay had a median absence of 97 days, range 19–119 days. The nature of sick pay had no significant effect on sickness absence duration. Comparison of Kaplan–Meier survival curves: chi-square 0.27, df 1, \( P = 0.73 \).

Twenty-six patients (31%) reported a delay in their return to work. Seventeen of these reported a single delaying factor, including seven excessive fatigue, two infections, one fear and seven ‘other reasons’ such as inability to drive and employer expectations.

Thirty-six (43%) of BHR cohort patients reported that their employers assisted them in their initial return to work through temporary work modification; however,
absence duration was not reduced by such support, Chi-square 0.09, df 1, \( P = 0.76 \).

Fourteen BHR patients who described their work as heavy manual had returned to work and with only one of these indicating that this was not back to their original substantive duties.

**Discussion**

The results highlight the wide variation in return to work advice given to patients undergoing two surgical procedures. While some of this variation may be due to complications of the surgery, it is possible that the variation may be due to health care practitioners being uncertain as to what to advise their patients, and to other non-medical psychosocial issues. Hasenbring et al. [4], Waddell [5] and Brage et al. [6] have all explored psychosocial and gender factors and how they impact upon work. They found that gender did not impact upon return to work following surgery whereas psychosocial factors did. We also found no difference in return to work times between genders in our BHR cohort. All the BAH patients were females; therefore this association could not be examined for this group.

Patients within the BAH cohort returned to work significantly quicker if they had been provided with return to work advice than those who had not been given advice. This result was not reflected within the BHR cohort; however, this may reflect the fact that the advice that was given within this group was more inconsistent. Das-singer et al. [7] found that a 60% improvement in return to work times could be achieved through positive communications, which may support our BAH results. The advice given to patients and the reported times taken to return to work following BAH are significantly longer than those indicated within guidance written by the DWP [2], although this guidance does not specifically mention heavy physical work which reflected 23 (32%) of our population. The median time for employees to return to work within our BAH cohort was 15.4 weeks compared to the DWP which suggests a period of 5–7 weeks absence before returning to non-physical work. The American Official Disability Guidelines (ODG) [8] suggest an absence of 6 weeks from general employment and 8 weeks for manual employment. Moller et al. [9] found that following a hysterectomy, 35% of patients still had subjective feelings of being unwell many months following their surgery which may not support the figures given within the previous guidelines; however, they may also

### Table 3. Comparison of advised and reported sickness absence duration for patients undergoing BHR

<table>
<thead>
<tr>
<th>Advised/expected absence duration following BHR</th>
<th>n</th>
<th>Cohort (%)</th>
<th>Reported absence duration (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;4 weeks</td>
<td>2</td>
<td>2</td>
<td>3.4</td>
</tr>
<tr>
<td>4–7 weeks</td>
<td>13</td>
<td>16</td>
<td>7.4</td>
</tr>
<tr>
<td>8–10 weeks</td>
<td>16</td>
<td>19</td>
<td>10.8</td>
</tr>
<tr>
<td>11–14 weeks</td>
<td>26</td>
<td>31</td>
<td>14.6</td>
</tr>
<tr>
<td>&gt;15 weeks</td>
<td>5</td>
<td>6</td>
<td>23.0</td>
</tr>
<tr>
<td>Other unspecified period</td>
<td>4</td>
<td>5</td>
<td>18.4</td>
</tr>
<tr>
<td>Not advised</td>
<td>17</td>
<td>20</td>
<td>10.3</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1</td>
<td>7.9</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. BHR—effect of physical labour on absence duration \( (P < 0.05) \).
just reflect anxiety and concern about their health and about their ability to return to be able to return to work.

The DWP guidance [2] does not yet extend to predicted recovery times following hip resurfacing, whereas the American ODG [8] suggest that after a total hip replacement, patients could return to clerical type or modified duties including manual/standing work, within 6–13 weeks. Hip resurfacing is regarded as a less invasive procedure which might therefore have a shorter recovery period, although as yet there is no long-term data to support this. Hip resurfacing patients in our study had a median absence of 13 weeks (range 10–26) which is at the upper limit of the ODG for total hip replacements, and may therefore reflect the uncertainty as to what should be advised by the health care practitioners.

It is possible that there may be uncertainty between surgeons and general practitioners as to who is best placed to advise the patient about return to work. An earlier but graded return to work is often the most appropriate way to support employees return to full fitness following surgery as this allows the employee to gradually regain their confidence and to build up their physical capabilities. Because the recovery rate and the psychosocial circumstances for each patient are likely to vary, it can be difficult for health care practitioners to generalize about individual return to work durations. As a result, surgeons may prefer to give their patients a very conservative estimate of the time it could take them to return to work so as not to disappoint those who happen to experience a delay. Our results indicated that patients are inclined to follow the advice irrespective of how they feel.

Conservative return to work advice may however discourage an early graded return to work for those that are capable of doing so. Ratzon et al. [10] highlighted that general practitioners were frequently overcautious in respect of the advice they give to their patients, which may unnecessarily delay a return to work. Dasinger [8] also found that the return to work time could be improved by 60% in the early stages of recovery, if the health care practitioner is more pro-active about returning to work.

Self-employed patients may have more financial incentive to return to work. This was reflected within our BHR cohort but could not be concluded from the BAH cohort which only included one self-employed patient. The provision of company sick pay however did not prolong sickness absence duration, neither did receipt of statutory sick pay alone. Within the BHR cohort, those working within the public sector returned to work significantly sooner than those in the private sector. The reasons for this are unclear.

This study only reviewed two surgical procedures within two hospitals in the West Midlands, and the response rate was quite low. As previously stated, the poor response rate may have reflected the fact that many patients were not actually in employment and therefore failed to respond. It is possible that the beliefs of special-ists and patients working within other employment populations around the country may be different than those found within our two hospitals. It is also possible that ethnicity may have an impact upon the culture and beliefs about surgery and return to work durations; however, this was not considered within our study.

Despite these limitations, we believe our results reflect a wider national situation in which health care practitioners have a lack of knowledge or understanding of the factors that impact upon return to work following surgery. This was a retrospective study and was therefore dependent upon patients recalling the information that they were asked.

The conclusion from this study would indicate that health care professionals give patients a variety of advice regarding sickness absence duration following BAH and BHR and that the advice given was generally much longer than evidence-based guidelines would indicate. The study also indicates that patients tend to adhere to advice given to them by health care practitioners and that they were likely to follow this advice despite feeling able to return to work. Finally, return to work times for patients undergoing BHR are shorter for those who are self-employed.

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Conflicts of interest

None declared.

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