

Original Article

Covert observation to find if patient hospital clothing saves radiotherapy treatment room time, and the issue of a questionnaire to find if this is detrimental to patients' experience of radiotherapy

M. Farnan, C. Blyth

School of Health Sciences, Queen Margaret University, Musselburgh, Edinburgh, UK

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Abstract

Background: Radiotherapy departments are having to work more efficiently to cope with increasing demand for radiotherapy resources. Radiotherapy treatment room efficiency may be increased by the introduction of hospital clothing as this negates the need for patient changing in the treatment room. However, studies have shown that hospital clothing can have a negative effect on patient dignity. It is therefore important to balance potential time saving with any detriment to patients.

Purpose: This study examined the effect that hospital clothing had on the time patients spend in the treatment room and aimed to identify patients' opinions of the clothing.

Materials and methods: Potential time saving was determined by covertly timing patients currently undergoing radiotherapy treatment as they entered and exited the treatment room. A total of 348 patients were timed in their own clothing and 341 were timed when they wore hospital clothing. The timings of these two groups were compared to determine whether hospital clothing saved treatment unit time. Patient opinions of the clothing were examined by issuing a short questionnaire, designed to gather ordinal data, at the end of their course of treatment. Questionnaires were issued only to patients who had worn hospital clothing in the radiotherapy department.

Results: Introducing hospital clothing saved a significant amount of treatment room time and patients were generally positive about wearing the clothing.

Conclusion: It is suggested that hospital clothing is a welcome addition to the radiotherapy department to increase efficiency without detriment to patients.

Keywords: covert observation; dignity; efficiency; hospital clothing; patient clothing; questionnaire

INTRODUCTION

Radiotherapy departments have become busier over the years. Reasons for increased demand for radiotherapy include increasing incidence of cancer attributable to population ageing¹ and the increase in complexity of treatment planning and technology.² Along with increased demand, waiting times for radiotherapy have been increasing³ and remain unacceptable, and so many patients are therefore not meeting waiting time targets.⁴ It is important for radiotherapy waiting times to be met as there is evidence that delay in radiotherapy has a negative effect on local control of tumour.^{1,2,5} In addition, radiation therapists can struggle with large volumes of patients and increasingly complex treatment plans⁶ and so timely treatment must be balanced with adequate time for staff to avoid mistakes.⁷ Therefore, while still allowing adequate time for accuracy, radiotherapy treatments should begin as soon as is possible and so radiotherapy departments must work as efficiently as possible.

Inefficiency can occur in the radiotherapy department when patients spend longer in the treatment room than necessary. One function that increases time spent in the treatment room is when patients remove and replace clothing before and following treatment. It is logical that minimising this changing time, by introducing specific, easy-to-remove hospital clothing for patients to wear, should increase available treatment room time and thus make the treatment units more efficient. Although this logic seems sound, time saving may not necessarily occur as demonstrated by a study by Nardone et al. where the use of hospital clothing in an out-patient clinic found no time saving benefit.⁸ Evidence is required to determine whether the use of hospital clothing in the radiotherapy department increases efficiency.

Patients' perception of hospital clothing is an important consideration as wearing it can be an upsetting experience.⁹ Patients may feel vulnerable because of the potential for body exposure¹⁰ and hospital clothing can stigmatise patients, make them feel depersonalised and make them feel more ill than they would otherwise.¹¹ Conversely, health and wellbeing

can be greatly improved by giving patients a positive identity,¹² which can in part be achieved by suitable hospital clothing. It follows that there is a duty to promote positive identity and avoid potential stigma when expecting patients to wear hospital clothing.

This study presents an investigation into the use of hospital clothing in a radiotherapy department. The department was due to introduce the use of hospital clothing for radiotherapy treatments and this therefore gave the perfect opportunity to examine the effects that this introduction had. Easy to remove and adjust gowns and jogging bottoms were issued to patients allowing them to change in a changing cubicle in their own time before coming into the treatment room. These gowns and jogging bottoms will be identified as the hospital clothing for the remainder of the paper. The time patients spent in the treatment room, hence potential time saving, was examined. Along with this, it was important to determine whether wearing hospital clothing was detrimental to the patient's experience of radiotherapy treatment and so this was also investigated.

AIM

The first aim of the study was thus to determine whether the use of hospital clothing saved radiotherapy treatment room time. The second aim was to determine if patients felt that the use of hospital clothing was detrimental to their experience in the radiotherapy department.

METHODS

Design

There were two aspects to the study, referred to from now on as the timings study and the questionnaire study. The timing study was a prospective non-randomised covert study to measure and compare time patients spent in the treatment room. The other used a questionnaire issued to non-randomised subjects to quantitatively gather and analyse data regarding patient opinions of the clothing.

TIMINGS STUDY

Subjects

All outpatients that were treated in the radiotherapy department were eligible to take part in the timings study. In-patients were not eligible for the timings study as they often arrived in the department wearing other forms of hospital clothing given to them in the wards. Patients were selected to take part in the timings study by convenience sampling. The timing part involved two groups of patients with one group wearing their own clothes and the other wearing hospital clothing. To ensure consistency, the subjects for both groups were selected from patients that attended only one treatment unit, specifically the unit where the researcher was resident for the duration of the data collection period. Data collection began 2 months before the department introduced the hospital clothing. At this time, all patients wore their own clothing for treatment and hence the subjects for the own-clothed group were selected from patients that attended the department in these two months. After the introduction of hospital clothing, all out-patients were required to wear the hospital clothing for treatment. In order to have a similar number of subjects in both groups, the hospital-clothed group was then selected from patients that attended the department in the 2-month period following the introduction. After the department had moved to the use of hospital clothing, there were a small number of patients who decided that they did not wish to wear it. These patients were therefore excluded from the study.

Patients that attended the department were allocated a treatment unit based solely on the availability of treatment slots on the units and as such allocation was not influenced by demographic factors or body site treated. This was the same for both own and hospital-clothed groups and as such they constituted a representative cross-section of the population and no bias that may lead to unreliable data in either group was apparent. As such, randomisation was deemed unnecessary.

Covert observation usually offers only a selected view of patient interactions and this may provide a distorted or skewed picture of these interactions.^{13,14} This was likely true in the

timings study as the researcher was a radiographer working full time on the treatment unit. Timings were done only when the researcher was working with patients on the unit and so timings could not be taken when the researcher was occupied with other duties. In addition, during busy periods it was not appropriate to prioritise data collection over patient treatments. This meant that even though timings were taken on the unit over the entire research period, in no way was every treatment episode recorded. Whereas one particular patient may have been timed on multiple occasions another may not have been timed at all. Accordingly, as in many studies involving covert observation, it was not possible to determine the exact sample size as the identities of the patients were not recorded.¹³

Instruments

No special equipment other than a stopwatch and paper and pencil was required for the timing part of the study.

The article of clothing given to the patients was in accordance with the area of the body treated. Patients treated above the waist were given the gown. The gown had multiple studs to fasten the front that allowed very easy access to the body area that required to be treated and similarly was easy to fasten after treatment was complete. This was a benefit to patients as it did not have to be removed completely and may reduce patient embarrassment during treatment.¹⁵ Patients treated below the waist were given the jogging bottoms. These had a simple elastic waistband and were therefore easy to adjust, remove and replace without the need for any belts or buckles. Clean clothing items were issued to patients at their planning appointment. The patient was then responsible for the care of the garment for the duration of the treatment and as such was free to launder it as often as they wished. Once the course of treatment was completed the garment was returned to the hospital laundry for cleaning.

Ethical issues

Covert observation can be construed as unethical¹⁶ and carries a threat to the ethical ideal of

voluntary participation.¹⁷ Covert observation was necessary in the timing study, however, as, in accordance with the Hawthorne effect, research subjects may act abnormally if they are aware that they are being observed as part of a research experiment.¹⁸ These issues were not seen as important by the local National Health Service (NHS) ethics committee.

Procedure

In the timings part of the study, two groups of patients were covertly observed entering and exiting the treatment room. One group wore their own clothing and the other wore hospital clothing. The actual time required for treatment was disregarded as this was independent of whether or not the patients were own-clothed or hospital-clothed. Both groups were observed on the same treatment unit and so the two groups experience in the department was identical except for the use of hospital clothing or not.

Patients were timed from their entrance into the treatment room until the moment they were at the treatment couch ready to begin. They were then timed from the moment they left the treatment unit couch, once treatment was completed, until they exited the treatment room. The sum of these times was the total time that the patient spent in the treatment room while not actually receiving treatment and was thus the time that this study was concerned with. Patients often conversed with staff in the treatment room before and after treatment and it was realised that this lengthened the times measured. It was unworkable to start and stop timing dependant on whether patients were talking or not and this would have led to unreliable data. Furthermore, if patients were asked not to talk this would not reflect the true nature of the time taken by patients in the room. This would also have been unprofessional and would have a negative impact on patient care.¹⁹ Talking time was a consistent factor in both the own-clothed and hospital-clothed groups and as such the talking time was included in all timing measurements. Times were recorded with a stopwatch with all times rounded to the nearest second. The patients' age, gender and the body site treated were also recorded in order to allow

analysis of possible time differences in different patient demographics.

The timings were carried out only by the researcher and so it was not required to train others the process of timing and there was no scope for inter-observer variations. The researcher was a member of staff of the department who was present all day every day for the duration of the study and as such they had full access to the treatment room for observations and gave no cause for suspicion on the part of the patients.

The timing data from the two groups were collected and compared using the Statistical Package for Social Sciences. A Mann–Whitney test was used to compare the timing data for both groups and determine whether any differences were statistically significant or possibly due to chance. The data were presented in tabular form and graphically by the use of a histogram allowing timing differences between the groups to be analysed.

QUESTIONNAIRE STUDY

Subjects

Patients were selected to take part in the questionnaire study by convenience sampling. All patients that had experience of wearing the hospital clothing were eligible to take part in the questionnaire study. Questionnaires were issued to a group of patients separate to those that took part in the timings study and were issued to these patients once the timings part of the study had been completed. At this time, the department issued hospital clothing to all patients and so questionnaires were only given to patients who had experience of using it in the department. Time constraints of the researcher limited issue of the questionnaires to a 3-month period.

The questionnaires were issued to all patients who had used the hospital clothing during the period and so the subjects were a cross-section of the whole population of radiotherapy patients. A patient that chose not to wear the hospital clothing was not issued a questionnaire and therefore excluded from the study.

Instruments

The questionnaire was designed to be easy to complete and quick to answer, no more than a few minutes at most. Questions were answered with either an 'agree or disagree' response or a grade on a five-point Likert scale that ranged from positive to negative responses. This made it possible to gain easily identified ordinal data and did not overcomplicate matters or force patients to decide between small differences in meaning. It was felt this was the best way to present the questionnaire as the answers could be easily compared from patient to patient and irrelevant responses were minimised.

Questions were related to areas found important in previous works on patient clothing and dignity. Literature regarding dignity was plentiful but literature specifically targeted towards hospital clothing was found to be less numerous. However, investigation of these works^{9-12,15,20,21} and the importance of complying with the Royal College of Radiologists' guidelines (2007) relating to patient clothing²² allowed a set of questions to be constructed. It was structured to grade the comfort, fit, duration of wear and any embarrassment that patients felt while wearing hospital clothing.

Questionnaires were given to staff members in the department to allow comments or possible changes to be identified. Subsequently, the questionnaires were given to a pilot group of 20 patients who were near the end of their treatment. These were all completed correctly with a range of responses given. This showed that the questionnaires were suitable for gathering the required data.

Ethical issues

The local NHS ethics committee had issues with the questionnaire. They stated that patients may have felt under pressure to complete a questionnaire even if it was against their wishes

to do so. To remedy this, a signed invitation from the lead oncology consultant was added to the explanatory statement describing the study that was distributed with the questionnaire. Questionnaires were anonymous and consent was implied by the return of a completed questionnaire. With this in place there were no further issues raised by either NHS or Queen Margaret University ethics committees, and so ethics approval was granted.

Procedure

Questionnaire issue and return was a simple matter. Department staff issued the questionnaire to patients at one of their treatment appointments near to the end of their course of treatment. Waiting until near to the end of their course of treatment assured that they had enough time to develop opinions about it. To boost the response rate, the questionnaire was issued with an information sheet containing an invitation from the head of the oncology department to take part and information on the rationale and need for the study. If a patient wished to take part they completed the questionnaire and returned it to any member of staff on their next visit to the radiotherapy department. All members of staff were involved in issuing and receiving questionnaires but only the researcher analysed the data from completed questionnaires.

Data from questionnaires were organised and analysed. The results from the different questions were tabulated to allow the data to be easily interpreted

RESULTS

Timings study

A total of 348 patients were timed in the own-clothed group and 341 patients in the hospital-clothed group (Table 1).

Table 1. Demographic split of patients in the own clothed and hospital clothed groups

	Age			Gender		Area of body treated			
	Under 63	63-72	Over 72	Male	Female	Chest	Breast	Head and neck	Pelvis
No. of own clothed	107	125	116	203	145	84	106	86	72
No. of hospital clothed	123	100	118	163	178	60	109	48	124

All patients in the own-clothed and hospital-clothed groups were compared (Table 2).

On average, it was found that a patient in the hospital-clothed group spent 73 seconds less in the treatment room for a radiotherapy appointment. The difference was found to be statistically significant, $p < 0.01$, when a Mann–Whitney test

was performed on the data. Data were compared graphically to show all patient timings in the form of a histogram (Figure 1).

The histogram shows that the range of timings in the hospital-clothed group was larger than in the own-clothed group. The hospital-clothed group has a much more defined peak than the own-clothed group, showing that time patients spent in the room was made more consistent with hospital clothing.

Table 2. Comparison of mean time spent in the treatment room between own-clothed and hospital-clothed groups

	Number of patients	Mean time (s)
Own clothed	348	185
Hospital clothed	341	112

The time taken for patients entering and exiting the treatment room was examined separately (Table 3).

More time saving occurred where patients had finished treatment and were leaving the room.

Times were also examined on the basis of patients, age, gender and body site treated. To examine the effect of hospital clothing on age, the subjects were split into 3 age ranges with approximately equal numbers of subjects in each (Table 4).

Table 4 shows that hospital clothing saved more time when it was used by older patients.

Table 5 shows that female patients saved more time when using hospital clothing than male patients.

It is seen in Table 6 that using the hospital clothing gave roughly equal time saving for pelvis,

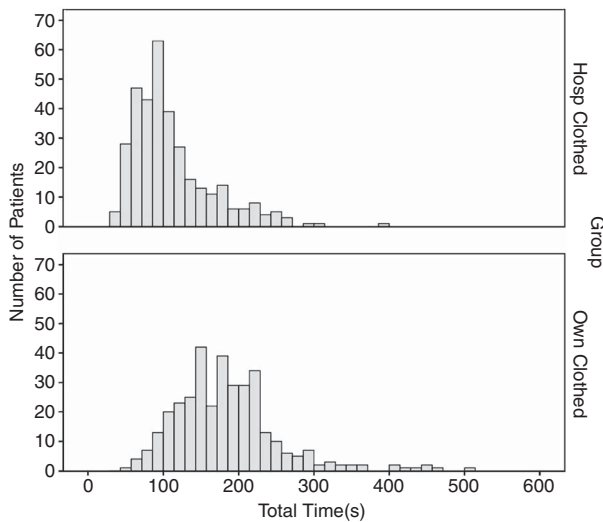


Figure 1. Histogram comparison between times own-clothed and hospital-clothed groups.

Table 3. Comparison of mean time saved for patients entering and exiting the treatment room

	Time on entering room	Time on exiting room
Own-clothed group (s)	76	108
Hospital-clothed group (s)	46	65
Mean time saved by using hospital clothing (s)	30	43

Table 4. Comparison of mean time saved using hospital clothing by age range

	Under 63 years	63–72 years	Over 72 years
Own-clothed group time in room (s)	156	185	211
Hospital-clothed group time in room (s)	98	109	127
Mean time saved by using hospital clothing (s)	58	76	84

chest and breast patients. Head and neck patients still showed time saving but the mean time saving was less than half of that of the other areas.

Questionnaire results

In all, 184 questionnaires were returned over a period of 3 months. A few questionnaires were not fully completed, however, and had answers missing. In these cases, only data from the answered questions were included.

Table 5. Comparison of mean time saved by using hospital clothing by gender

	Male	Female
Own-clothed group time in room (s)	180	191
Hospital-clothed group time in room (s)	120	104
Mean time saved by using hospital clothing (s)	60	87

Table 6. Comparison of mean time saved by using hospital clothing by body area treated

	Pelvis	Chest	Breast	Head and neck
Own-clothed group time in room (s)	198	176	194	170
Hospital-clothed group time in room (s)	118	87	109	132
Mean time saved by using hospital clothing (s)	80	89	85	38

Table 7. Results from the questionnaire

Question	Response as a percentage of the participants (n = 184)				
	Male	Female			
1) Are you male or female?	36.4	62.5			
	Gown	Jogging bottoms			
2) Did you receive the gown or the jogging bottoms?	73.9	25			
	Agree	Disagree			
3) I understand why I have been asked to wear the clothing.	94	4.3			
4) I would like to be given the choice to use the clothing or not.	15.8	80.4			
	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
5) I find the clothing comfortable.	45.7	33.2	16.3	3.3	0.5
6) I find the clothing to be a good fit.	25.5	26.6	32.1	9.8	4.3
7) I find the clothing to be well covering.	54.3	32.2	8.2	1.6	1.1
8) I am embarrassed to wear the clothing in waiting areas.	0.5	1.6	13.6	9.2	72.3
9) I am embarrassed to wear the clothing in the treatment room.	0.5	1.1	9.2	2.2	84.8
10) Use of the clothing increases the time I spend in the radiotherapy department.	1.1	16.8	46.2	9.8	22.3
	Agree	Disagree			
11) I have to wear the clothing for longer than necessary.	1.1	96.7			
	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
12) The clothing is suitable for radiotherapy treatment.	62	26.1	3.8	2.7	3.3
13) Overall I am happy to wear the clothing.	57.1	28.8	10.3	1.1	1.6

Most questions gave very positive answers. Responses to all of the questions are shown in Table 7.

DISCUSSION

Timings study

The introduction of hospital clothing into the radiotherapy department saved radiotherapy treatment room time, as seen in Table 1 and Figure 1. This refutes the conclusion of the study by Nardone⁸ where hospital clothing did not save time in the healthcare setting, although it is noted that as the Nardone study was performed in a clinic instead of the radiotherapy department, the studies were performed under very different circumstances.

Even in the radiotherapy department, however, the amount of time saved was noted to

differ depending upon the patient demographic. Time before treatment and time after treatment was examined separately. Most of the time saving occurred in the period when patients exited the room. This showed that a large portion of time saving was because patients no longer needed to replace many layers of clothing after treatment. This was noted by the researcher when patients were observed to take a long time to get dressed after treatment when it was necessary for them to do up numerous buttons or belts or braces, etc.

Examining time saving compared with patient age showed that increased age increased the time saving effect of using the hospital clothing. In general, it was observed by the researcher that older patients in the own-clothed group took longer to remove and replace clothing than younger patients and were more likely to need assistance. This observation agreed with the results of time taken with age in the own-clothed group (Table 4). Older patients tend to have greater problems with mobility and movement and therefore it follows that older patients produced more time saving benefit when the need to change in the treatment room was removed.

Unlike the comparison of different age ranges, the male and female group of own-clothed patients took similar times to dress and undress (Table 5), and so another factor must have accounted for the 27 seconds difference in time saving with hospital clothing noted between males and females (Table 5). This is likely because females were predominantly treated on the upper part of the body because of the large incidence of breast cancer. This meant that females could lie on the bed without removing the gown, and in many cases breast cancer patients entered the room and immediately lay on the treatment couch. Conversely, males were mostly treated around the pelvis area due to incidence of prostate cancer. In the hospital-clothed group males were required to remove the jogging bottoms and as such had to perform extra work such as removing their shoes. Accordingly, times for males and females were consistent in the own-clothed group but females were quicker in the hospital-clothed group. These observations suggest that females

saved more time due to using the clothing, not because the own-clothed females were slower.

The amount of time saving was also found to be dependant upon the area of the body treated (Table 6). Time saving was reasonably consistent for breast, chest and pelvis patients but it was around half as much in the head and neck group. This is likely due to a reason similar to the one that was evident in the male group discussed above. Head and neck patients' immobilisation required the removal and replacement of shoes before and after treatment and as such this introduced extra work for patients before treatment commenced. When comparing head and neck to chest treatments, the own-clothed timings were similar but the hospital-clothed group was 45 seconds quicker. Head and neck patients did not have any extra medical issues that would hinder their preparation for treatment and so the only difference between the chest and head and neck groups was that head and neck patients had to remove their shoes. This therefore appears to be the reason for the smaller amount of time saved with head and neck patients.

Overall, the average saving of 73 seconds per patient would save almost 50 minutes per day of treatment room time on an individual treatment unit (assuming the unit treated 40 patients per day). This time could be used to add extra patients to the daily workload and reduce waiting times for radiotherapy treatment. This time saving is multiplied by the amount of treatment units in the department, and in a department with many units a significant amount of extra treatment room capacity would be realised. This could then reduce delays in starting treatment, as seen as important by Jensen et al. and Chen et al.^{2,5}

The timing part of the study could have been improved by timing many different patients. As radiotherapy treatment requires the patients to attend the department on multiple occasions, many of the timing episodes involved the same patients. A quick or slow patient, observed multiple times, may have biased the data. A similar study where each patient is only observed on one occasion would reduce any possible bias from this effect.

It was also realised that there are other factors that may unnecessarily increase the time patients spend in the treatment room. In addition, interaction with staff that is not necessarily conducted in the treatment room will also cause inefficiency. These factors will cause further inefficiencies in the radiotherapy department as a whole but were not analysed in this study.

Questionnaire

Generally, the clothing was seen by patients in a positive light in most areas examined but there were a few issues raised by the questionnaire. It was interesting to note that in general patients did not wish the choice whether to use the clothing or not (question 4). It was thought this choice would be welcomed by patients but this was evidently not the case. Patients occasionally commented to the researcher that they were happy to do whatever they were asked, as they felt that staff knew what was best to keep the department running smoothly. If all patients had similar thoughts, then this might explain their lack of desire for a choice to wear the clothing.

Another point of interest was found in the answer to question 10. Patients changing in a changing room before and after treatment will increase the time they spend in the department but in general patients were unsure if this was the case. Some patients realised this but the majority did not or were unsure and so only a few would have bias against wearing the clothing because of this negative aspect.

The question of fit gave the largest negative response. As described by Topo and Iltanen-Tahkavuori,⁹ if the clothing is ill-fitting it can degrade the experience of patients in the healthcare setting. Clothing that is too small can be revealing and allow bodily exposure. Clothing that is too large was seen as embarrassing. Gowns and jogging bottoms were available in only four sizes and therefore a particularly large or small patient struggled to find a good fit. The fit of the clothing was found to be an area for improvement.

All questions were further investigated by examining response by gender and item of

hospital clothing that was worn. No significant difference in opinion was found between males and females. Responses from those wearing the gowns and jogging bottoms were also broadly similar. Therefore, only the overall results of all participants are reported.

The overall perceptions of the clothing were good with <3% of patients rating themselves as quite or very unhappy to wear the clothing. This, along with the generally positive responses to the other questions suggests that patients felt they were presenting a respectable image when wearing the hospital clothing. This is encouraging as it has been found that patient's inner image is related to the outward image that they present.¹⁵ These results were similar to those obtained by other studies that found that patients preferred to use a gown for radiotherapy to the breast.^{20,21}

GENERAL

Hospital clothing raises other issues for the radiotherapy department. First, a cost to the department will be incurred in terms of procurement, laundering and replacement of the clothing itself. Laundering was kept to a minimum by issuing a garment to the patients for the duration of their course of treatment, allowing them to launder it themselves if they chose to do so. This may also have been a benefit to patients as it has been found that some patients prefer to have their own garment in their possession for their whole treatment course.²² Nevertheless, one extra item of laundry was produced for every patient treated in the department and this added to the costs involved.

Another possible burden to the department is that some patients required assistance to change into the hospital clothing and this required a radiotherapy assistant or another staff member to be on hand to aid them with this. In practice, it was found that only a few patients needed assistance and it was possible to plan around their appointment to ensure someone was available to help them. However, this did mean that a radiotherapy assistant or other staff member would be diverted from their primary tasks, and so in this way hospital clothing had a negative time impact on the department.

The aim of the hospital clothing was to speed up the treatment process but it was not desirable that patients would feel they were on a 'conveyor belt' of patients waiting to be led in and out of the treatment room. All patients were still encouraged to discuss their progress with staff and at no time were they intentionally hurried into or out of the room. The sole motive was to eradicate all practices that did not involve the treatment proper.

RECOMMENDATIONS

Time saving was hindered by patients that had to remove their shoes in the treatment room. It is recommended that patients should be asked to wear slip on shoes or slippers to avoid this delay.

It is recommended that the selection of sizes of the clothing is improved to avoid potential embarrassment to patients.

Future research could be done to examine total time patients spend in the department and if this is increased by the use of hospital clothing. Although time was saved in the treatment room, hospital clothing created extra work in the department in administration and laundering. Future studies could include these factors and come to a more accurate conclusion about time saving and efficiency in the department as a whole, not only in the radiotherapy treatment room.

Although it was encouraging that the questionnaire showed patients did not find the clothing detrimental to their treatment, it did not allow a particularly in-depth analysis of their opinions. It was not possible to discover any key reasons for any displeasure they may have had. With a larger sample size more negative views would have been forthcoming and this extra data may have allowed greater understanding of these views.

CONCLUSION

The completion of the study showed that the introduction of hospital clothing for patients did

indeed increase efficiency in the radiotherapy treatment room. In the specific department in which the research took place, almost 50 minutes of treatment room time per day per unit could be saved by the use of the clothing. This time saved would allow extra patient treatments per day without the need for more radiotherapy treatment resources. In addition, it was found that patients were positive about wearing hospital clothing and they did not believe that wearing it was detrimental to their experience of radiotherapy. Therefore, the hospital clothing was deemed to be a success and there is no reason why this should not be replicated in other radiotherapy departments. In conclusion, it is recommended that other departments that are searching for ways to increase efficiency without detriment to patient dignity should consider the introduction of hospital clothing.

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