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Role development for therapeutic radiographers in the public hospitals in Hong Kong

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Abstract

Purpose: To identify factors determining the possibility of role development for therapeutic radiographers in Hong Kong public hospitals.

Methods: Questionnaires were sent to all ranks of radiographers, clinical oncologists, medical physicists and nurses in four clinical oncology departments in local public hospitals. Information was sought on role development and the nature of extended role tasks that should be undertaken by therapeutic radiographers. Both open and closed questions were used to ascertain views. Individual, semi-structured interviews were used to explore further opinions of therapeutic radiographers. For open-ended questions, data were analysed thematically by grouping similar opinions, while for closed questions data were analysed by descriptive statistics and independent-samples t-test/Levene's test for homogeneity of variances.

Results and Discussion: In total, 132 out of 285 questionnaires were returned (46.32%). Subjects (77.10%) expressed views that role development in therapeutic radiography (RT) would have a positive impact on oncology services within the region. Medical dominance was highlighted as the main barrier to role development (mean: 2.86; SD: 1.78). Radiographers would tend not to extend their roles by taking up tasks that were performed by oncologists: for example, radiographers would not want to prescribe drugs to patients with radiation side-effects (57.58%), while 83.33% of oncologists also disagreed with this being performed by radiographers. Other professionals (nurses and medical physicists) held a reserved view in delegating their tasks to radiographers, even after accredited clinical training.

Conclusion: Role development in RT should relieve the increasing workload of the entire clinical oncology department. It also increases the status of therapeutic radiographers within the health care setting, which is beneficial for the whole profession. However, efforts must be made by all health professionals within the department to ensure that the greatest effectiveness can be achieved from such developments.

Keywords

Role development; radiography

INTRODUCTION

The identification of role development among different health professions is an important component of advancements in health sciences.[1–3] In the context of oncology, the increasing need for services is no doubt a significant problem all over the world as there are a number of underlying reasons including clinical, epidemiological, professional and educational factors[4] that drive the need for increased services (Table 1).

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Table 1. Factors driving the need for increasing oncology services[4]

Clinical factors:
The need to minimise delays and reduce gaps in radiotherapy treatments; rapid pace of technological advancements
Epidemiological factors:
Ageing population; genetic factors with respect to cultural differences
Professional factors:
Changes in philosophy of care; need for information to be shared between health professionals for effective, efficient and safe patient care
Educational factors:
Changing expectations of quality of care among patients; competency-based education and training; changing roles of medical staff (e.g. taking on new roles in hospital management)

Regional need for role development in therapeutic radiography

Role development by therapeutic radiographers in the worldwide health communities is nothing new.[5,6] In Hong Kong, however, no such discussions have been held among the health professions. However, there is a need for such developments in local hospitals and this can be explained by the increasing number of new cancer cases: the number of new cases escalated from 17,275 in 1993 to 19,344 in 1996, eventually to a total of 21,344 in the year 2000.[7] This condition reflects the need for more medical staff in this specialty in order to maintain and improve the quality of service for cancer patients. This solution, however, cannot be implemented in Hong Kong as the imbalance in public accounts has worsened drastically in recent years.[8] The Hospital Authority (HA), which overseas the 44 public hospitals in Hong Kong, cannot afford the huge financial burden required for the recruitment of health professionals and the purchase of new equipment. Therefore, alternative solutions must be sought to relieve the workload of health care workers and at the same time minimise the waiting time required for patients to receive proper management. One possible method to relieve the workload of oncologists is to transfer part of their workload to allied health workers such as therapeutic radiographers,[9–12] which will then lead to a better quality of care, thus improving the efficiency of service delivery.[13,14]

More supportive evidence for this is that the roles of radiographers have expanded and changed continuously over the past century.[11,15] As an illustration, the way that the healthcare system has developed in the United Kingdom is by advancing clinical practices of those non-medical professionals.[16,17] This proves that greater engagement in advanced practice helps to improve patient care and management within the clinical oncology department.[16,18]

The main aim of this study was to explore the possibility of role development for therapeutic radiographers in Hong Kong public hospitals. The probable resistance to role development with respect to clinical settings was explored. It is hoped that the findings will provide useful information which may act as guidance for consideration in planning any future role developments within the profession.

Contextual background and research objectives

Research has investigated this subject in other countries, such as the United Kingdom, however there is no study that concentrates on role development for therapeutic radiographers within the local setting. The design of this research project allowed the following three objectives to be addressed: to explore the need for, and possibilities of, role development for therapeutic radiographers within the local community; to identify the key factors that influence the beliefs and attitudes held by stakeholders when considering the possibility of role development of therapeutic radiographers; to identify the potential areas of, and barriers to, role development for therapeutic radiographers in Hong Kong.

Recent publications by The Royal College of Radiologists show how the changing practice in all clinical disciplines requires a flexible approach to the skills mix, activities and roles of all the members of the cancer care or radiology teams. The development of the radiographer's role must be carefully coordinated, with similar change occurring in the medical, nursing and other professions that contribute to this aspect of a patient's care.[19,20] This indicates that such developments are not only a matter for therapeutic radiographers, but also all for all professionals within the cancer care team.

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Table 2. Number of questionnaires distributed to various health-care professionals

Hospitals	TR	RO	NR	MP
A	21	10	20	5
B	21	10	10	5
C	45	20	15	10
D	29	15	16	8

TR = Therapeutic radiographers; RO = radiation oncologists; NR = nurses; MP = medical physicists.

METHODS

This study included four clinical oncology departments in public hospitals in Hong Kong and employed both quantitative and qualitative approaches, including questionnaires and interviews at various time intervals.

Questionnaire surveys

Data collection

An individual set of questionnaires was designed for each profession - therapeutic radiographers, clinical oncologists, medical physicists, and nurses. The questionnaires were designed to collect the overall views and opinions by means of both closed and open-ended questions. Questionnaires were distributed 2 weeks after ethical approval was granted and they were then collected 2 weeks after distribution.

Distribution of questionnaires

The number of questionnaires distributed to each hospital is tabulated in Table 2.

Data analysis

Questionnaires were analysed using SPSS 11.0 for windows. Statistical tests depended on the number of responses received from each of the four professions.[21,22] If the number of questionnaires collected for each group was greater than 30, Levene's test for homogeneity of variances and independent-samples t-test were used to explore any significant differences of opinion from various groups and from within different hospitals.[23,24]

Levene's test for homogeneity of variances was adopted when there was one independent (grouping) variable with three or more levels (groups) and one dependent continuous variable. It was performed to test whether the variance in scores was the same for each of the three groups. If the significance value for Levene's test was greater than 0.5, it could be concluded that the homogeneity of variance assumption had not been violated.[23] An independent-samples t-test was adopted when a comparison of mean scores had to be performed on either a continuous variable or for two different groups of subjects.[24] In this situation the confidence interval was set to 95% which implied that if the p-value calculated was smaller than 0.05, the result showed a significant difference between specified group(s). On the other hand, if the number of responses collected was smaller than 30, analysis could only be performed by simple descriptive statistics, such as means and frequencies, together with independent-samples t-test as no representative features would be shown if Levene's test, was adopted under this condition. For open-ended questions, results were summarised by grouping similar opinions and by calculating the percentages for particular opinions.

Semi-structured interviews

Following analysis of the points raised by respondents of various professions, the interview questions were formulated and re-structured for therapeutic radiographers as follow-up investigations on specific themes and topics.

The interviews followed a semi-structured, face-to-face format[24,25] and were conducted by researchers 2 weeks after the collection of all questionnaires and consisted of a 9-item interview of approximately 15 min duration. All interviews were recorded by means of a digital recorder, followed by drafting of major points raised. A total of 14 interviewees (8 Radiographer II, 5 Radiographer I and 1 Senior Radiographer) were recruited. All responses were transcribed and data obtained were analysed thematically.

RESULTS

Response rates to questionnaires were: TR (56.9%); RO (30.91%); MP (64.29%); and NR (49.18%). The findings presented in this section are selected from results of a larger study and have

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Table 3a. *Role development – the need in local clinical settings*

	SA	A	N	D	SD	Total
B3. Proper role extension and expansion are essential for therapeutic radiographers within the region	21 67.94%	68	39	1 2.29%	2	131
B7. Role development of therapeutic radiographers may improve the quality of health care services	19 70.20%	73	35	2 3.05%	2	131
B9. Role development of therapeutic radiographers is good for the oncology services within region	19 77.10%	82	24	4 4.58%	2	131

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

Table 3b. *Comparison between openness of patients towards oncologists and radiographers*

		SA	A	N	D	SD	Sub-total
B8. Patients are more open to radiographers compared with oncologists, as they spend more time with radiographers	Radiation oncologists	**1**	**0**	**4**	**13**	**0**	**18**
	Other professions	24	48	28	11	2	113
	Total	**25**	**48**	**32**	**24**	**2**	**131**

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

been chosen either due to their significance or interest factor. Therefore, although there were 132 respondents within the main study, often n = 131 due to missing data.

Questions regarding perception of health professionals on role development in therapeutic radiography

With reference to Table 3a, 70.2% of respondents agreed that role development is crucial in terms of improving health care services locally; while 77.1% of respondents also agreed that such developments will contribute to a positive impact on the oncology services within the region.

As shown in Table 3b, the oncologists held distinctly different ideas on issues regarding the time of contact between patients and radiographers as compared with other professionals.

Oncologists (70%) disagreed with the statement that patients are more open to radiographers than oncologists. However, 64% of other professionals, including nurses, medical physicists and radiographers showed agreement with the statement.

When subjects were requested to identify the possible barriers to role development for radiographers, 42 respondents ranked 'medical dominance' (mean: 2.86; SD: 1.78) as the most important barrier. Findings from interviews indicated that the majority of respondents (10/14 interviewees) suggested 'Resistances from other professionals' as the main barrier to role development.

Questions regarding extended roles of therapeutic radiographers

Views from therapeutic radiographers on issues relating to role development

There is a clear indication that radiographers (N = 66) at higher ranks (i.e. senior staff) held a stronger view when agreeing that role development

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Table 3c. *Radiographers' views on role development in relieving workload of other professions*

	Mean ± standard deviation			
B5. Proper role extension of radiographers may help in relieving workload of other professions within the department	Senior group	Junior group	Sig. value for Levene's test	Sig. p-value for t-test
	1.06 ± 0.89	1.80 ± 1.05	0.074	0.003

Senior group = Department Manager, Senior Rad and Rad I (N = 31); junior group = Rad II (N = 35)
Rank from 0 (strongly agree) to 4 (strongly disagree).

Table 3d. *Radiographers' uncertainty on adopting extended roles following prior training*

C3. Radiographers in Hong Kong, following accredited training which demonstrates competence to practice, should be allowed:	SA	A	N	D	SD	% of D/SD
a. To give prescriptions for routine radiation treatments	2	9	21	20	14	**51.52%**
d. To prescribe drugs to patients with radiation side-effects	2	13	13	23	15	**57.58%**
g. To inject patients with radio-pharmaceuticals	1	11	15	18	21	**59.09%**
h. To inject patients with contrast media for simulation	3	10	13	18	22	**60.61%**

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree; N = 66.

Table 3e. *Radiographers' positive views towards extended roles following training*

C3. Radiographers in Hong Kong, following an accredited training which demonstrates competence to practice should be allowed to:	SA	A	N	D	SD	% of A/SA
e. To give clinical advice and formal counselling to patients undergoing RT	19	36	7	4	0	**83.33%**
f. To verify treatment machine check films independently.	16	31	8	10	1	**71.21%**
i. To undergo IMRT treatment planning	28	33	5	0	0	**92.42%**
l. To construct moulds for treatment	14	34	12	5	1	**72.73%**
m. To fit casts prior to simulation/treatment	19	36	9	2	0	**83.33%**

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree: N = 66.

will help to relieve the workload of other professionals within the department (Table 3c).

Levene's test for equality of variances was performed. As the significance value is larger than 0.05 ($p = 0.074$), equal variances were assumed.

Following analysis by the independent-samples t-test to compare the views of senior and junior groups of radiographers, the results indicated that there is a significant difference between the two groups ($p = 0.003$). It can be concluded that the senior groups agreed more that proper development of radiographers helps to reduce the workload of other professions within the oncology department than the junior group.

In terms of clinical competence for possible role extension, there are several procedures which have been strongly refused by radiographers, even if accredited training courses were given to them prior to practice (Table 3d).

The listed roles are those which have over 50% disagreement from therapeutic radiographers. Radiographers would tend not to extend their roles into those previously performed by oncologists.

On the contrary, there are a number of procedures that radiographers felt competent to handle upon suitable training (Table 3e).

There is an indication that they would tend to extend their roles into areas which are routinely

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Table 3f. Oncologists' negative views towards extended role for radiographers after training

C3. Radiographers in Hong Kong, following accredited training which demonstrates competence to practice should be allowed to:	SA	A	N	D	SD	Total
a. Give prescription for routine radiation treatments	**0**	**0**	1	7	10	**18**
	0%			94%		
d. Prescribe drugs to patients with radiation side-effects	**0**	**0**	3	7	8	**18**
	0%			83%		

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

Table 3g. Oncologists' positive views towards extended roles for radiographers after training

C3. Radiographers in Hong Kong, following accredited training which demonstrates competence to practice should be allowed to:	SA	A	N	D	SD	Total
e. To offer clinical advice and formal counselling to patients undergoing radiotherapy	0	12	6	**0**	**0**	18
	66.67%			**0%**		

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

Table 3h. Nurses' views towards extended roles for radiographers following training

C3. Radiographers in Hong Kong, following accredited training which demonstrates competence to practice, should be allowed:	SA	A	N	D	SD	Total
a. To inject patients with contrast media for simulation	1	6	4	**5**	**14**	30
	23%			**63.33%**		
b. To inject patients with radio-pharmaceuticals	2	7	4	**5**	**12**	30
	30%			**56.67%**		

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

performed by nurses and medical physicists (except "verifying machine check films" which is currently performed by oncologists).

Views from radiation oncologists on issues relating to role development

No oncologists agreed to radiographers prescribing drugs for either routine radiation treatments or patients with radiation side-effects (Table 3f).

However, the majority of oncologists showed agreement that radiographers should extend their roles to offer clinical advice and formal counselling to patients undergoing radiotherapy. None of the respondents disagreed with the statement (Table 3g).

Views from medical physicists' and nurses' on issues relating to role development

Over half of nurses expressed their views that therapeutic radiographers should not be allowed to perform injections on patients, even though they had received clinical skills training (Table 3h).

Medical physicists held mixed views about whether radiographers should be allowed to perform complex treatment planning independently (Table 3i).

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Table 3i. Physicists' views towards extended roles for radiographers following training

C3. Radiographers in Hong Kong, following accredited training which demonstrates competence to practice should be allowed to:	SA	A	N	D	SD	Total
a. To undergo IMRT treatment planning independently	0 35%	6	3	**6** **47%**	**2**	17
b. To undergo SRT/SRS treatment planning independently	0 12%	2	7	6 **47%**	2	17

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

Table 3j. Possibility of reducing workload of other professions if role development is implemented

		SA	A	N	D	SD	% SA/A	Sub-total
Role development of therapeutic radiographers may enable them to share your heavy workload to a certain extent	Radiation oncologists	1	5	7	5	0	33.33%	18
	Medical physicists	0	3	6	6	2	**17.65%**	17
	Nurses	7	10	6	5	2	56.67%	30
	Total	8	18	19	16	4	40.00%	**65**

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree.

Table 3k. Willingness to delegate responsibilities to competent therapeutic radiographers

		SA	A	N	D	SD	% SA/A	Sub-total
I would be willing to delegate responsibility to competent radiographers to perform duties traditionally carried out by oncologists	Radiation oncologists	1	6	5	6	0	38.89%	18
	Medical physicists	0	3	2	9	3	**17.65%**	17
	Nurses	3	7	7	7	6	33.33%	30
	Total	4	16	14	22	9	30.77%	**65**

SA = Strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree

Table 3l. Potential support from radiation oncologists and medical physicists

	Profession(s)	% SA/A	% SD/D
I would have no problem in supporting therapeutic radiographers to extend their roles once they have the competence in doing the duties	Radiation oncologists	55.56%	**0.00%**
	Medical physicists	29.40%	35.29%
I will totally support the role development of therapeutic radiographers in Hong Kong	Radiation oncologists	88.89%	**0.00%**
	Medical physicists	47.06%	11.76%

Questions Regarding Future Perspectives of role development as foreseen by health professionals

As shown in Tables 3j and 3k, over 50% of nurses agreed that role development has a constructive outlook for workload reduction in clinical settings, while other professionals did not expect this to help relieve their workload. In addition, less than 50% of each profession under investigation was willing to delegate their roles to radiographers, even if they could show their competence.

About 18% of medical physicists who responded to these questions agreed that such developments may help to relieve their workload, in terms of delegation of responsibility to competent radiographers.

When comparison was made between physicists and oncologists on whether they would support the profession for such developments, **none** of the oncologists intimated that they would have a problem in supporting role development for radiographers in Hong Kong (Table 3l). This, however, did

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not apply to physicists, where over 35% of respondents admitted to having problems in showing their support, although only a minority of them (11.76%) disagreed to support such developments.

To conclude at this point, agreement was found from radiographers (89.39%), oncologists (100%) and physicists (76.47%) that adequate support from the HA is essential for the successful implementation of role development for therapeutic radiographers. In addition, a formal CPD (continuous professional development) scheme should be implemented for therapeutic radiographers (radiographers: 75.76%; oncologists: 88.89%; physicists: 70.59%) for the purpose of role development among the professions.

DISCUSSION

Role development for therapeutic radiographers seems to be a new term for health professions within the region; however, this has already been implemented in a number of countries such as the UK.[3,26]

It is worthwhile noting here that "role development" in this context comprises of role expansion and role extension: Role expansion is where one expands one's own scope of practice in roles that are traditionally performed by radiographers.[18,27,28] The advancement of new technology in treatment delivery, thus creating new responsibilities within the profession, is an example; role extension involves taking up new duties which were previously performed by other health care professionals, such as nurses and oncologists.[29]

The aim of role development in therapeutic radiography (RT), taking the UK as an example, is to achieve the goals of providing advanced cancer care to patients, as well as re-organising the entire department for effective use of clinical resources,[14] by means of better inter-professional communications, creation of multidisciplinary teams and skills mix.[14,30–33]

In the following section, three major themes will be investigated to judge whether such developments should be implemented regionally to achieve the above goals: perceptions of health professionals on role development; extended roles by therapeutic radiographers; and future perspectives for role development, as foreseen by health professionals.

Perception of health professionals on role development in therapeutic radiography

Drivers for role development in therapeutic radiography

From the questionnaires returned, 89 respondents agreed that role development is essential for improving quality of services within the oncology department. The drivers for role development, when compared with the UK, are no doubt different, but both Hong Kong and the UK share the same problem of increasing workload pressures within the department.[7,34] However, the problem of acute shortages of key staff does not apply in the region at this moment.[15,35] Other possible drivers for change in Hong Kong, as suggested by interviews with radiographers include: sharing of workload among professionals to achieve the aim of "patient-centred" care; and since all qualified radiographers nowadays are degree holders, so it is possible to perform more advanced tasks within the department. In addition to this, results from questionnaires have indicated that except for the radiation oncologists, all other professionals agreed that patients are more open with radiographers when compared with oncologists, as they spend more time with radiographers. This is clearly an advantage for role development in RT, thus facilitating skills mix among various professions within the department.[16,18]

Probable resistances to role development in the profession

Research has shown that medical dominance is ranked as the major barrier to role development for therapeutic radiographers. This can be explained by the fact that doctors lead the entire health care system in the region,[36] in which they are responsible for making decisions for all healthcare professions and they are the budget holders in the department. In addition, respondents have also stated that resistance from other health care professionals is an important consideration in implementing role development within the oncology department.

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"Chances offered by other professions are the main factor to determine whether such developments can be implemented." (Interviewee 8, Rad II)

It can be seen that other professions are not prone to delegate their jobs to radiographers. According to the literature, health professionals in the UK do not seem to have a similar problem.[35,37,38] The reason may be that serious shortages of medical professionals (oncologists and nurses) have led to an increasing workload,[9,10] and therefore they would tend to favour other health workers to share their work in order to relieve their roles within the department.[31,35]

Extended roles of therapeutic radiographers

Therapeutic radiographers' views towards extended roles

A significant difference in views between the senior group of radiographers (DM, Senior Rad and Rad I) and the junior group (Rad II) was demonstrated over the view that proper role extension may help in relieving workload of other professions within the department. Although both groups have shown agreement to the point suggested, this reflects that the senior staff (mean: 1.06; SD: 0.89) are more confident than the junior ones (mean: 1.80; SD: 1.05). From this finding, it can be observed that the seniors may help to initiate such developments to a greater extent than the junior ones. This may be an advantage from the viewpoint that seniors have higher decision-making power and that may better initiate such developments within the profession.

A main area in this research was to investigate any possible new roles, either expanded or extended ones, to be performed by therapeutic radiographers upon suitable training. A number of roles were suggested for respondents, so as to assess the appropriateness of whether these should be performed by radiographers or not. Results indicated that radiographers would tend to extend their roles as delegated by medical physicists, instead of radiation oncologists. This may be because radiographers feel more competent in taking up roles of other professionals rather than clinicians. The results somewhat deviated from investigations done in the UK,[27,39] in which radiographers are prone to extend their roles into the domains of oncologists, nurses and medical physicists. However, a review by Paterson[11] has pointed out that the roles of oncologists carried out by radiographers on their behalf, more or less at their behest, has resulted in a highly unsatisfactory situation and is not sustainable into the future. The most probable reason for this may be that such role extension has been implemented too fast and radiographers did not have adequate time to practise themselves in order to achieve a certain level of advanced competencies.[11,15] Clinical skills are not only a matter of knowledge, but also a combination of knowledge and experience.[26,40] The lesson that can be learnt from this is that such developments must be driven by having timed and clear directives with guidance from experienced professionals who originally performed the tasks. It can be concluded that at any period of significant change, both positive and negative factors will normally be encountered and thus the changing nature of clinical oncology services is no exception. From the literature,[11,18] suggestions were given to staff within the department, especially radiographers, that eventually one should expect greater clarity about not only their own job functions but also the job functions of other staff groups. In addition to role extension, role expansion had also been suggested by therapeutic radiographers: as results from interviews have indicated that since role expansion does not involve the problem of delegation, which is one of the major barriers, thus possible new expanded roles should be performed by radiographers upon training. Finally, this will increase the status of therapeutic radiographers within clinical settings.

"If the major barrier can be eliminated, then when the number of roles performed by radiographers increase, definitely our status within the department will be much higher than before." (Interviewee 3, Rad I)

Views on extended roles from other health professionals

The main effect on other professions in terms of role development for therapeutic radiographers is the issue of delegation for role extension, as there is a need for the delegation of tasks. According to the General Medical Council (GMC) in UK, delegation is defined as (Table 4)[40]:

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Table 4. *Definition of delegation and its preliminary requirements*

"Delegation involves asking a nurse, doctor, medical student or other health care worker to provide treatment or care on your behalf. When you delegate care or treatment you must be sure that the person to whom you delegate is competent to carry out the procedure or provide the therapy involved. You must always pass on enough information about the patient and the treatment needed. You will still be responsible for the overall management of the patient."	The four preliminary requirements that lead to delegation[40]: 1. The person to whom the task is delegated is competent; 2. The process is defined in a protocol agreed by the delegator, the person to whom the task is delegated and the relevant employer(s); 3. The process and outcome are monitored, and that this process is then modified should this be found to be necessary; 4. The person to whom the task is delegated assumes responsibility for it, except that the medical responsibility for the patient remains with the delegating medical professional.

As stated in the above, the definition itself has placed great emphasis on the competency of the delegated individuals as appointed by the delegator. This is also the major consideration of oncologists, physicists and nurses in this case. Oncologists have shown strong disagreement towards the giving of prescriptions to patients for radiation treatments and side-effects. The findings show large deviation from the research by Hogg and Hogg,[41] where enthusiastic support from both the British Government and the Department of Health in the UK has been sought. In addition, the Society of Radiographers has already been working towards a submission document that supports the case for radiographers to be authorised as independent and supplementary prescribers.[37,41] Obviously, adequate support from HA, clinical departments and other professions must be ascertained for this to be promoted.

On the other hand, a clear trend has been shown from results obtained from the oncologists, that radiographers are able to extend their roles by offering clinical advice and formal counselling to patients undergoing radiotherapy. Findings from one study have shown that the demanding new role as a treatment review radiographer will better serve the needs of people having radiotherapy treatment, provided that it is properly supported educationally and clinically.[42]

Furthermore, nurses would not like to delegate the injection of contrast media and/or radio-pharmaceuticals to therapeutic radiographers, even if they can demonstrate competence in performing these tasks. This again contradicts findings from the UK, where it has been suggested that these roles have already been successfully performed by radiographers in a number of hospitals.[29] Such variations may possibly arise because there is no crisis with regard to inadequate employment of nurses for the clinical oncology departments within the region, which is the opposite to the situation in the UK.[10,14,15]

With respect to the views from medical physicists, results have shown that nearly half of the respondents did not agree to delegate the role of advanced treatment planning to radiographers. The main reason why local medical physicists would not like to delegate this role may be that this will directly minimise their roles within the department. Such role extension has already been one of the current major role developments in the field of RT overseas.[11]

Future perspectives of role development as foreseen by health professionals

With reference to recent role development of therapeutic radiographers in other countries, the ultimate goal of having role development within the profession, apart from solving the problem of shortage of therapeutic radiographers and clinicians,[9,10] is that it may also help to provide better and more effective patient care within the department.[16,35,42] When different health professionals were asked to comment on whether such developments might enable them to share their heavy workload, only nurses agreed with this issue. This may be due to the fact that nurses within the department perform roles

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which may be possibly performed by radiographers upon simple and appropriate training, such as wound dressing. However for radiation oncologists and medical physicists, since most of their tasks involve complex and advanced skills, thus these professions may hold a reserved view in delegating their tasks to radiographers who have never been trained in tasks which they are currently dealing with.

To sum up, none of the professions have shown particular willingness in delegating their responsibilities to competent radiographers. The results here have indicated once again that barriers from other health professionals seem to be one of the major resistances to role development in the field of RT.

CONCLUSIONS AND RECOMMENDATIONS

This paper provides an overview of some of the key factors that appear to be influencing role development for therapeutic radiographers in public hospitals in Hong Kong; an important, yet largely neglected, research domain in the field of radiography in local clinical settings. It explores explicitly the views of four different groups of health professionals within the clinical oncology departments about their opinions towards the aspects of role development in radiotherapy.

Role development of therapeutic radiographers contributes a positive impact in the oncology department, as agreed by different health professionals within the specialty. A general perception was also gained from therapeutic radiographers that if role development is to be implemented, it would add to the benefits to the whole profession. However, there are still a number of improvements/modifications that have to be made before role development can really be initiated. There are three main lessons that can be summarised from both the findings from this research and experiences from UK therapeutic radiographers [14,35,40]:

1. No guidance and clear directives about the concepts of role development have been published with regard to RT.
2. Other professions within the department (i.e. oncologists, medical physicists and nurses) do not realise the need for role development in RT.
3. Related authorities including the HA, Association of Therapeutic Radiographers (ATR), individual clinical divisions (Departments of Clinical Oncology) and the academic institution (The Hong Kong Polytechnic University) may not realise the necessity for role development in radiotherapy due to the fact that no pilot study has ever been performed on this topic.

It is recommended that the first step towards role development in Hong Kong is to have the ATR taking up the responsibility in initiating the concept of role development with members of the association, followed by the introduction to other health professions who are working in the same clinical settings. According to the constitution of the ATR,[43] the main objectives of the association include: to promote legislation in the interests of the members and to be concerned with and to participate in affairs affecting the interests of the members. Role development is no doubt affecting the interests of therapeutic radiographers. In addition, the ATR represents career development, so the ATR is an ideal authority for initiating such development among the profession. On the other hand, it is important to publish a fundamental document which helps to establish clear and concrete guidelines for other health professions to offer feedback on such developments. At the same time, it is suggested that therapeutic radiographers should attain high competencies within their traditional roles so that other professions can build up confidence in delegating their roles in the future.

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