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Changing Me to We: Developing Teambuilding in Radiation Therapy

Krista Dawdy MRT (T) BSc (Hons) MSc ^{1,2}; Colette Fegan (PhD) (MSc) ³; Aisha Sheikh MSc, Bed MRT(T) ^{1,2}; Shaunteque Harris ^{1,}; Merrylee McGuffin MRT(T) MSc ^{1,2}

Affiliations:

1 – Sunnybrook Health Sciences Centre, 2075 Bayview Avenue, Toronto, Ontario, Canada.

2 - Department of Radiation Oncology, Faculty of Medicine, University of Toronto, Ontario,

Canada;

3 - Department Allied Health Professions, Sheffield Hallam University, Sheffield, United Kingdom

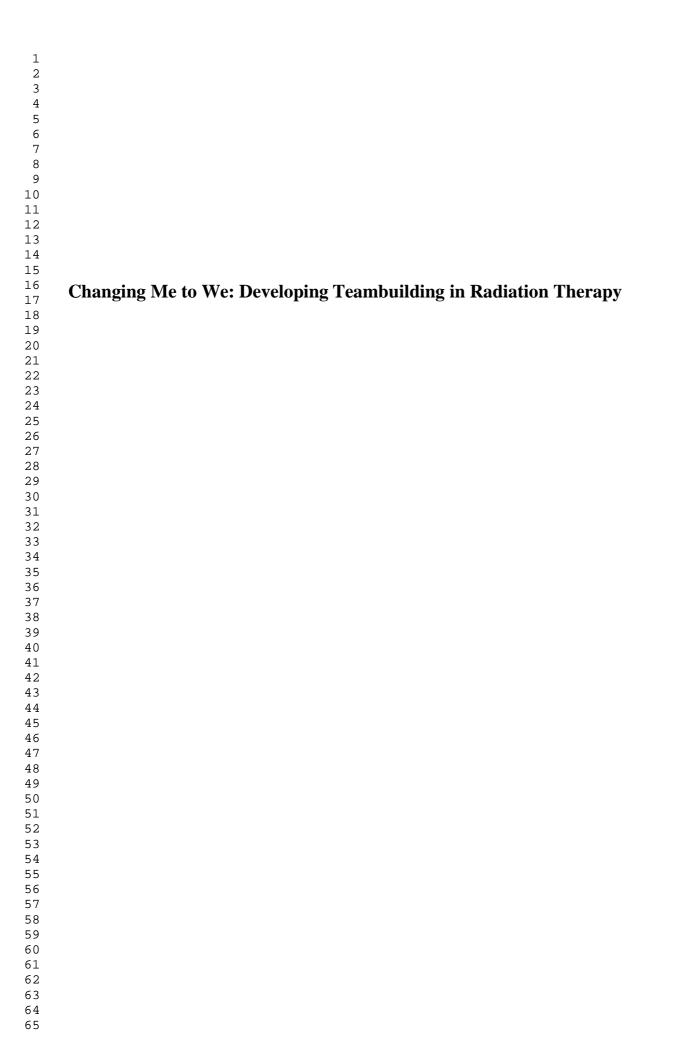
Corresponding Author:

Krista Dawdy

ORCID: 0000-0003-3438-6135

2075 Bayview Ave, Toronto, Ontario M4N 3M5

- ⁵⁸ 416 480 6104
- 60 Krista.dawdy@sunnybrook.ca



Declarations

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Conflicts of Interests/Competing Interests

The authors have no conflicts of interest to declare.

Ethics Approval

This study was approved by the institutional research ethics board.

Abstract

Background: There has been a causal link identified within the literature between poor team function and errors, patient outcomes, staff satisfaction and performance. Lacking is supporting evidence on teambuilding and its impact on overall team performance and team dynamics. Within radiation therapy, there is difficulty in understanding the inner workings of team dynamics due to the unique complex nature of teams and with very little evidence on the impact of team building specific to radiation therapy. The focus of this research is to form a better understanding of the effects of team building before and after a team building session in a large urban cancer centre. The knowledge gained can help in future trainings to promote and facilitate teambuilding, to develop team dynamics and lead a change in culture.

Methods: Team building sessions were booked and scheduled for 148 radiation therapists. Pre and post session evaluations were distributed to all participants and collected at the end of each team building session. Descriptive statistics were used to analyze Likert scale responses. Open-ended question responses were coded and analyzed for emerging themes using thematic analysis.

Results: 110 of 148 radiation therapists attended one of the scheduled team building sessions. Presession evaluations indicated radiation therapists have a good understanding of factors that affect teamwork (88% agree); are aware of the multi-generational impact (78% agree); have the skill set to build a respectful team (86% agree); and are comfortable dealing with conflict (67% agree). Postsession evaluations indicated that participants had gained increased knowledge on teamwork (66.3% agree; 30.7% strongly agree); are more aware of the generational impact within teams (59% agree); new strategies developed to help improve team dynamics and the ability to use the lessons learnt immediately (67% and 71% respectively agree). Open ended comments indicated an interest in additional teambuilding sessions and further education on conflict resolution.

Conclusion: Results showed an increased awareness of the factors that impact team dynamics amongst radiation therapists and an interest in receiving further education in teambuilding. Findings will be utilized to better inform debate in future development of teambuilding educational sessions to improve overall team dynamics in radiation therapy.

Keywords: teambuilding, radiation therapy, team dynamics

Introduction

Team cohesiveness and collaboration in healthcare can play an impactful role in patient safety and job satisfaction, with reported outcomes that show an association between positive team dynamics and a decrease in medical errors as well as an increase in overall patient and staff satisfaction [1, 2]. There is a significant trend recognizing the importance of teamwork and the impact team cohesiveness has on individual performance which can be directly translated to profitability in the business world and the economic impact in healthcare due to staff sick time and burnout [3]. Furthermore, in healthcare there is a heightened focus on teamwork due to the increasing complexity of healthcare and specialization creating a potential for increased risk of adverse events [4]. With the demand for high quality person centred healthcare, ease of access to personal health information and patient autonomy in healthcare decision making, there is an increased focus on team performance in healthcare delivery [1, 4].

Radiation therapy (RT) teams are unique. RT is dynamic with technologies constantly emerging, changing practice and directing educational processes to how we adapt and function within a team. New protocols and changes in practice with the addition of fluctuating teams, adds another layer of complexity to team learning and has been cited as a significant barrier in teambuilding [5]. Radiation therapists (RTs) work closely together within teams, multi-tasking, interacting with multiple software programs and multiple healthcare disciplines including patients and caregivers simultaneously. Due to the complexity and nature of treatment delivery, teams are comprised of interprofessional experts with diverse skills sets and responsibilities working in partnership and relying on each other to deliver high quality RT to a variety of oncological sites [6, 7,]. The impact of teambuilding on team dynamics in RT has been insufficiently investigated within literature. Most literature addresses team dynamics as it relates to primary care practitioners in medicine. Evidence related to RT specific team dynamics is minimal.

Also lacking is the evidence on the sustainability or long term efficacy of interventions or tools that engage teams and improve team dynamics in healthcare. Empirical research on team dynamics is difficult with many limitations on quantifying any notable changes to help support specific tools and frameworks on teambuilding [8]. There is minimal research on teamwork and team training specific to the RT profession. More importantly, most literature on teambuilding and team dynamics in healthcare, although also quite limited, cannot be translated to RT practice due to the complexity and nature of teams in RT.

Background

The idea of this research project was initiated by the results of a simple departmental educational needs assessment survey (Appendix 1) conducted in early 2018 to help create a framework in the strategic planning for learning and development within the RT department. This survey is completed annually. Questions are created to assess the following:

- 1. What are the departmental needs with regards to education?
- 2. What areas of further educational initiatives are of interest to staff?
- 3. What is the current state of the education program?
- 4. What delivery methods best meet the departmental needs?

These annual assessments have been completed for the last 8 years and are utilized for forward planning of the educational program for the upcoming year. This includes mandatory training, responsive training necessitated due to departmental needs (new protocols or techniques) and desired training as a result of the needs assessment survey. Timing, venue and mode of delivery are taken into consideration during the planning phase. Much of the current education is focused on the technical aspect of RT delivery, such as new equipment, treatment techniques and protocols with minimal emphasis on the development and promotion of team dynamics and teambuilding. RT is unique as we do not work exclusively within one team; not only is the team dynamic it is also multifaceted and interprofessional, working in congruence to deliver high quality patient care. Teams can change day to day due to workload, vacation and illness. Working within a department with close to 148 RTs creates another layer of complexity when defining a "team". In the survey conducted in 2018, categories rated high for future training included specialized training and teambuilding skills that also aligned with management's identified departmental needs and goals for the upcoming fiscal year. This initiated further thought on how this could better address the current state of education in the RT department.

Materials and Methods

This study was approved by the institutional research ethics board.

The study was conducted in a large urban radiotherapy centre over a 6 week period to accommodate staffing due to shifts, part-time staff and vacation to ensure all staff had the opportunity to attend a teambuilding session. All RTs were eligible with a range of clinical experience from 0-25 plus. In total there were 148 (n=148) eligible participants whom were given a total of 1.5 hours of dedicated working time to attend a teambuilding session. All sessions were held in a private meeting room and were facilitated by a facilitator external to the RT program but internal to the organization. Written consent was not required for this study as evaluations on the education session were optional.

To ensure we were getting the "biggest bang for our buck" we engaged the corporate organizational development team to help with design and facilitation to develop a comprehensive, time sensitive education session that met both departmental and organizational goals. The teambuilding sessions included discussions on the generational gap, respect and civility and conflict resolution that are further outlined in greater detail in Appendix 2. In total there were 6 team building sessions booked (Fig. 1) and participants were distributed unevenly throughout each session due to staff self-scheduling. N=110 RTs participated in the sessions.

Participants were given a paper based pre session evaluation prior to the teambuilding session commencing and a paper based post-session evaluation at the completion of their teambuilding session. All evaluations were collected at the end of each session by the independent facilitator. (Appendices 3&4). Pre-session evaluations utilized a 4-point Likert scale and open-ended questions for qualitative comments to identify RTs knowledge and comfort level on team dynamics. At the end of the sessions, time was allotted for completion of the paper based post-evaluation of the session. Questions were asked using a 4-point Likert scale to identify key concepts learnt from the session and areas for improvement. RTs were asked to identify 2 strategies they would take away from the session and there was a section available for open ended comments. All evaluations were anonymous and there was no identifiers collected.

Analysis

Descriptive statistics were used to analyze the quantitative data from the survey (Likert scale questions). Open-ended questions were coded and analyzed for emerging themes through thematic analysis.

Results

A total of 110 RTs (74%) completed a teambuilding session. All RTs were given dedicated working time to attend a session. Pre-session evaluations were distributed at the start of the session to assess RTs knowledge on teambuilding. Most RTs felt they had a good understanding of factors that affect teamwork (88%) and the skills needed to help build a respectful team (86%), shown in figure 2.

At the end of the teambuilding session RTs were given dedicated time to complete a paper based post-session evaluation. Questions asked were to identify knowledge and skills gained from the session, shown in figure 3. RTs agreed or strongly agreed that they had developed knowledge and skills from the teambuilding session (97% and 92.5% respectively). RTs also agreed or strongly agreed that they have learnt new strategies to help develop and build a respectful team (92.5%).

In response to one of the qualitative questions "What 2 strategies will you take away from this session that you feel will be useful for you?" the top strategies identified in this open ended question were 28.2% communication, 17.3% conflict resolution and 15.5% respect and civility. Other key concepts identified were: listening, think before you speak and don't make assumptions.

When asked if RTs wanted further educational sessions on team dynamics the participants were almost equally split with 51.8% YES, 42.7% NO and 6.5% skipping this question.

Qualitative Comments

An open-ended section to allow for comments on areas for improvement was in most cases left blank (78%). Common themes were; nothing (20%), more education on conflict resolution (5%), different venue, and session was too long, session was too short, group was too large, less emphasis on generational gaps and management should also attend team building sessions respectively. One comment "*a session dedicated with each individual team you work with*" should also be acknowledged and is very prudent to our clinical practice in RT. The facilitator notes found in Appendix 5 identified common themes captured from the evaluations; more time spent on conflict resolution, RTs were engaged in activities and management/administration should also complete an educational session on respect and civility. The facilitator also provided future recommendations to build upon the sessions that were delivered found in Appendix 5.

Overall the teambuilding education sessions received positive feedback with requests for further education. 68% of participants rated the teambuilding session overall 8 and above. Comments noted were:

"I had no expectation of this session but I have walked away with many tips that can be employed daily not just in our work life, social life, family life and church life" "Communication is key. Everyone's opinion is valuable."

"It was awesome!"

"More time, felt rushed."

"Felt a little bit like generation vs. generation"

"Focus the session on one topic not three. Not enough time to cover everything. I found the generational gap to be helpful."

"I think this session was useful to help RTs"

Discussion

Teamwork is a central framework in healthcare delivery. Poor team dynamics can impact the team as a whole through lack of productivity, motivation and mistrust [9]. Working within teams

poses its own unique challenges, as teams are heavily influenced by personalities, interpersonal relationships, roles, culture and other external factors [8]. Interpersonal relationships and how one interacts within these relationships plays a significant impact on how the team functions as a whole. Recognizing and adapting your own behaviors that best meets the team is essential in improving team dynamics as expressed by Chiaburu and Harrison, 2008 [10] "*Co-workers are not only a vital part of the social environment at work, they literally define it.*"

Team training is highly social and integrates thinking and action together, which may also result in an increased commitment to the organization by embedding the organizational expectations and goals into team development [11]. Learning as a team can help promote a collaborative culture that has the potential to improve patient outcomes as well as staff and patient satisfaction [12]. There is a gap in the quality of literature in evaluating the efficacy of team training due to bias or lack of robust analysis. Also lacking is long term follow up and evaluation [13]. Most literature recognizes the impact of poor staff satisfaction resulting in a decline in performance, increased sick time, errors, poor job satisfaction and patient satisfaction with further impact to operational costs and consequential higher costs to employers [14]. Spanning the last 20 plus years, the literature recognizes the value in team training to improve outcomes and a highlighted need to examine the impact of team training within dynamic teams, such as RT.

An e-search revealing a gap in the literature on teambuilding in RT and a highlighted need within our department led to the creation of teambuilding education sessions for RTs. RTs were given dedicated working time to attend a learning and development session. Indicated anecdotally and through post-session evaluations, RT staff appreciated the dedicated time for the session and felt they had gained some knowledge after attending the session. RTs indicated in pre-session evaluations that they had a good understanding of factors that affect teamwork (88% agree; 12% strongly agree). Postsession evaluations also indicated that participants had gained increased knowledge on teamwork (66.3% agree, 30.7% strongly agree); are more aware of the generational impact within teams (59% agree, 38% strongly agree); new strategies to help improve team dynamics and the ability to use the lessons learnt immediately (67% and 71% agree, 25.5% and 26.2% strongly agree respectively). Of note, although most RTs felt they had the skills needed to build a respectful team, 92.5% felt after the session they had a better understanding of the skills needed to improve team dynamics. 97% are more aware of the generational impact in the working environment.

In the development of these teambuilding sessions, highlighting the importance of generational similarities and differences was thought to help develop team cohesiveness and further develop better working relationships as the RT department consists of staff with a wide range of experience from 0-25 plus years. With such a multigenerational group it was thought that providing a better understanding of the beliefs and values of the individual generations would further develop team

dynamics. The impressions produced by the multigenerational activity and its subsequent high evaluation in the teambuilding sessions was surprising, meriting further discussions in the future. Within the literature it is thought the generational impact may have influence on overall team relationships caused by the perceived notions of differences in values placed on work ethic, time management, work relationships and organizational commitment [15]. Although in the post-session evaluation participants noted a greater awareness of the generational impact (97% agree and strongly agree) this did not provide evidence on how it impacted one's overall teamwork. It is also important to acknowledge that the generational gap activity was initially intended as a 10 minute ice breaker, but with the rich discussions that ensued on this topic and the engagement of participants, the time allotted was exceeded. Consequently, less time spent on conflict resolution and communication strategies. This led to a few open ended comments noting that the generational gap activity took too much time during the training session. Despite this, learning about the impact of the different generations in decision making and working relationships, as well as the rich commentary that occurred within each of the individual sessions gave reason for the high evaluation.

Current research trends are noting the importance of understanding the generational impact on team dynamics although there are theorists who criticize the assumptions made within the generational theory [15]. Leiter et al, 2019 utilized self-reported evaluations assessing various dimensions of work life and relating them back to age of nurses (n=522). They eliminated participants whose age was on the cusp or outside of the designated generations, Baby Boomers (1943-1958) and Gen X (1963-1981). Although they found some impact on distress in the working environment relating to generation and overall experience, the elimination of a large proportion of potential participants (n=209), as well as the static nature and bias of the evaluations, may have impacted their overall results. This study does validate the need for further exploration on this particular topic. Specifically for RT, incorporating further understanding of the generational theory will be beneficial for future team building sessions due to the vast range in age and experience within our department.

In hindsight, further evaluation on specifically how these teambuilding sessions impacted the team dynamics would have been beneficial. Again there is the difficulty in assessing the impact of training and team dynamics due to the complex and dynamic nature of the working environment in healthcare that has been evidenced throughout the literature, but specifically for RT this especially holds true [8, 16]. Further research and improved knowledge of team building and processes within RT teams is warranted to better understand how they can be improved to have a positive overall impact. Also of importance is linking team dynamics to patient outcomes and satisfaction to further develop current literature on this particular topic. Another layer of difficulty that must also be addressed is the importance of buy-in at all levels, as well as engaging all key stakeholders to help develop and build cohesive teams that are sustainable. RTs were given dedicated time to attend a

teambuilding session, but to sustain lessons learnt there needs to be follow up sessions. Information gained from these teambuilding sessions will be used in forward planning to meet the needs of future education sessions.

Challenges and Bias

Relationships within the team can be impacted by hierarchy, leadership and personalities that should be of consideration within the scope of this project. Due to this interdependency there is reluctance for RTs to disclose readily any issues they may experience within a team, for fear of backlash [5]. These factors as well as the delivery of the teambuilding sessions and evaluation distribution could potentially limit the authenticity and validity of the evaluations including the comments within each of the teambuilding sessions. Some RTs may not have felt comfortable speaking up or discussing interpersonal relationships in an open forum.

There were challenges in the co-ordination of teambuilding sessions and ensuring RTs were able to attend due to staffing, workload and working life. We work a 12 hour work day, therefore training and education sessions are scheduled multiple times throughout the week at peak times when a high proportion of staff are present. Yet we continue to struggle with staff attendance and engagement. This is a common theme in the literature with cited barriers noted as burden of workload, lack of time and monetary incentives [17]. There is also the possibility of perceived pressure to attend the teambuilding sessions. Although not mandated, RTs were scheduled to attend one of the sessions provided. However, it is important to note that not all RTs attended the teambuilding sessions (110/148).

Evaluations were distributed before the commencement of the session to gain RTs' knowledge and perception prior to session delivery and then again after the completion of the teambuilding session. This does have the potential to create a Hawthorne effect as both the facilitator and peers are present during the completion of the evaluations [18]. Time constraints also pose a potential problem gathering comments and the validity of some of the responses given within the questionnaire. This could also explain the lack of comments provided by participants that is further discussed in the study limitations section. Questions asked on the evaluations relied on RTs' self-reporting their own thoughts and feelings on the impact of the sessions, which may be somewhat of a static perception of the moment, time and interactions of the teambuilding sessions adding bias to the data collected. We also acknowledge researcher bias in the creation and development of the questions asked as they are making assumptions of what is important to know, therefore unintentionally leading the information gathered [20]. There is also the subjectivity and interpretation of the comments by the researcher that may also introduce a level of bias in the collection of data. Coding and identifying common themes within the evaluations may eliminate some of the bias that is introduced. Using a paper based approach does ensure higher response rates but the burden and possibility of error during data entry by the researcher does present a potential problem. Data was coded, entered and verified by the researcher at the time of data entry.

Inherently, individual participants bring their own biases to the session that may have an overall impact on the information collected by participants [21]. These challenges were recognized and addressed by the facilitator as an issue in each of the individual sessions, but still may have impacted data collection.

Study Limitations

There are a few limitations to the study that need to be acknowledged within this paper. During the teambuilding sessions much of the rich qualitative data that occurred during discussions within each individual session was not captured. Having an observer or taping of each individual session would have allowed for a high level of content and data collected. The sessions themselves were not consistently the same in content and coverage of topics within the proposed outline due to the unique interactions of the participants within the individual sessions. Discussions were strongly encouraged to engage participants, which unfortunately changed the time management and content covered in each individual session limited to the 1.5 hr timeframe. The sessions were not made "mandatory" but staff were scheduled to attend a specific session at an allotted time. Due to participants missing their scheduled sessions, they would attend an alternate session which created some sessions being more highly attended then others.

Conclusion

Team building provides shared knowledge to facilitate improved teams' efficiency and overall team dynamics [22]. There is supporting evidence on the linkage of team training to improved team dynamics and patient safety [12, 22].

The overall rating for the team building sessions was very high, based on a scale of 1 (low) - 10 (high), with 68% scoring 8 or above. RTs have highlighted a need for change through multiple forums. A few steps have been made to help engage RTs on improving team work and these sessions have made RTs more self-aware on what factors can impact teams. Future education on respect and civility and conflict resolution in particular are being facilitated organizationally as well as within the RT department. RT as a discipline, will always be a highly fluid field with changes in teams that can vary day to day, minute to minute with little choice or collaboration. These factors are unpredictable and cannot be accounted for but hold much credence within team dynamics and must be acknowledged.

These education sessions have provided the foundation for future teambuilding sessions and offer an introduction to initiate the start of the conversation on team building in RT. Moving forward, we have support and a commitment from both management and organizational development to continue future offerings in teambuilding educational sessions. Due to the lack of empirical evidence on the impact teambuilding sessions have on team dynamics in RT, future sessions will incorporate quantitative measurements. Thoughts are evaluating staff and patient satisfaction surveys as well as sick time and error reporting pre and post sessions to identify a linkage to teambuilding education and patient outcomes.

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Appendices

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Appendix 1

Departmental Needs Assessment

(via survey monkey)

- 1. How many years of experience do you have working in Radiation Therapy?
- 2. List any clinical/technical/patient care learning needs you currently have or anticipate needing to address in the future
- 3. Please identify your top 3 choices for further education from the list below.
 - IGRT Team building Brachytherapy MRI Planning and dosimetry Documentation Mosaiq Quality Assurance Gamma knife SBRT Align RT
- 4. How do you prefer to receive your educational information? Online
 Hands on/Skills Lab
 Paper
 Lecture format
- 5. Would you be interested in wellness initiatives implemented within the radiation therapy department?
- 6. If you answered yes above, please provide wellness ideas that you would find beneficial or would actually use.
- 7. Please feel free to share any other comments/feedback/suggestions below.

Appendix 2

Team Building Sessions Proposal

Goal:

Help increase awareness of factors that impact team-work, communication and team dynamics, to help promote a change in culture.

Proposal:

Working in conjunction with Organizational Development the following plan is being proposed:

- Conduct 6 interactive sessions 1.5 hours
- Organizational Development will facilitate each of the sessions
- Sessions booked to accommodate staffing and spread out over a 3-week period
- Topics to include: respect and civility, conflict resolution and impact of generational gaps
- These topics were chosen to help raise self-awareness
- A minimum of 15 people/session would be required to attend
- Provide a toolkit to help sustain behaviours
- Pre and post evaluations of each session

Generational Gap:

(20 min)

Each generation will create a story board of their generation including values and what's important to them. This is to bring awareness to the likes, dislikes, history and background of various generations, to appreciate each other's differences and what they all bring to the team as well as to help the group work more effectively and collaboratively.

Respect and Civility:

(40 min)

The objective of the session was to identify the behaviours that impact the culture of civility and respect at work, identify the cost of incivility and strategize as a group how to create and promote a psychological safe work environment where respect and civility is the norm. Discussion points:

- Nonverbal innuendo
 - Verbal affront
 - Undermining activity
 - Withholding information
 - Sabotage
 - Infighting
 - Scapegoating
 - Backstabbing
 - Failure to respect privacy
 - Broken confidences

Identify strategies that the team/individual/organization can adapt to build a thriving workplace where civility and respect are the norm of how we interact with one another.

Conflict Resolution

(30 min)

The objective of this portion of the session was to introduce the steps and keys to effectively resolve a conflict.

Discussion points:

- How do you define conflict?
- What are typical responses to conflict?
- Identify your greatest strength when dealing with conflict
- Identify what is the outcome of conflict
- How can conflict be detrimental to a team
- Identify positive outcomes from conflict
- Identify negative outcomes of conflict

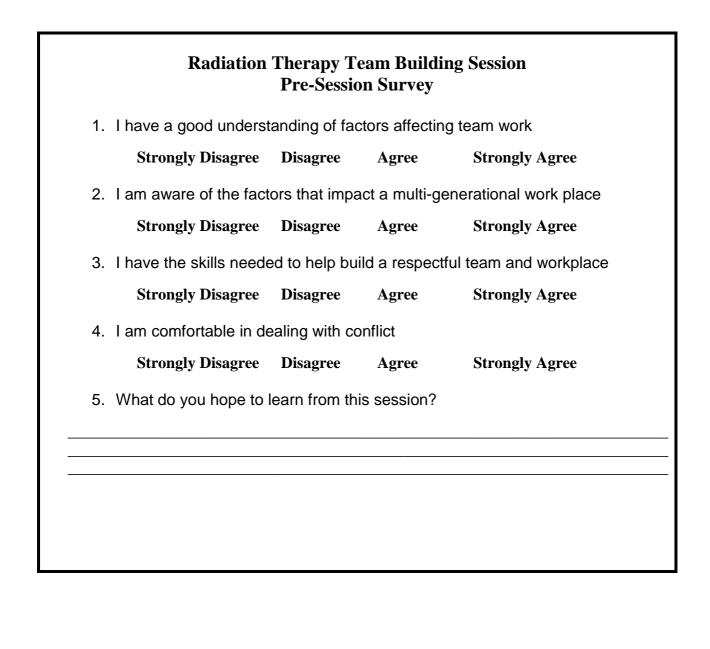
Post evaluation and session wrapup

(5 min)

- Reinforce lessons learnt
- Toolkit
- Further educational opportunities to build team work

Appendix 3

Teambuilding Pre-Session Evaluation Questionnaire



Appendix 4

Teambuilding Post-Session Evaluation

1.	This session has increased my knowledge about the factors affecting team work			
	Strongly Disagree	Disagree	Agree	Strongly Agree
2.	I am more aware of how	different genera	tions impact th	e working environment
Ple	Strongly disagree ase explain how this app	Disagree blies to your pra	Agree actice/your tea	Strongly Agree m
3.	I will be able to immedia	ately use what I	have learnt in t	his session
	Strongly disagree	Disagree	Agree	Strongly Agree
4.	I have a better understanding of the skills needed for good team work after attending session			
	Strongly disagree	Disagree	Agree	Strongly Agree
his	session has provided with Strongly disagree	n new strategies Disagree	o help build a Agree	respectful team and workplace Strongly Agree
5.	Which 2 strategies will you?	you take away fr	om this session	that you feel will be useful fo
6.	What would you change	from this sessio	n?	
	The facilitator presented	•	•	Strongly Agree
7.	Strongly Disagr			
8.	On a scale of 1-10 pleas			10

Appendix 5

Facilitator Notes

Radiation Therapy Team Building Sessions Post-Sessions Follow-Up Meeting Summary

Themes covered during the 1.5 hr session:

Generational Gap, Civility and Respect, Conflict Resolution

This session should be considered an introductory session. It's not possible to cover these topics adequately in the time allotted.

Generational Gap Summary:

This activity was the introduction to the session. It was meant to raise awareness about oneself

- Most people found the activity to be fun and a great way to shed light on the various age groups on the team
- Some people openly shared their experiences and how they felt
 - Younger generation: being made to feel as if they don't have anything to contribute, don't know/understand something
 - Older generation: need the younger generation to understand that they have the experience and can foresee things/problems that may occur

Civility and Respect Summary:

- Group talked about which form of incivility resonates with them the most and why
- Generated a lot of discussion, especially with regards to non-verbal innuendos
- Most common theme: if supervisors/manager will be taking the civility and respect workshop as well

Conflict Resolution Summary:

- Not enough time for group discussion at this point
- Shaunteque used this time to talk about the steps and skills for effective conflict resolution (ppt)
- Need more time to use scenarios and activities for discussion and application of skills