Cultivating Acute Care Rehabilitation Team Collaboration Using the Kawa Model

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Recommended Citation

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Abstract

Purpose: Effective healthcare team collaboration is imperative for quality client-centered care, job satisfaction, and overall morale. Rehabilitation team collaboration can be impacted by high productivity demands, differing backgrounds of individual team members, and the unpredictable healthcare environment. The Kawa (river) model, a culturally-neutral model of occupational therapy practice, has been shown to improve communication and collaboration with its use of metaphors, but its utility in various contexts to enhance collaborative practice is still being explored. The purpose of this study was to implement an evidence-based teambuilding intervention with use of the Kawa model to investigate the impact on acute care rehabilitation team collaboration. **Method:** A 5-week pretest-posttest study was completed with a group of eight rehabilitation team members, consisting of occupational therapists, physical therapists, and a speech language pathologist, in an acute care setting. Pre and post-surveys were utilized to gather quantitative and qualitative data on perceptions of team collaboration, knowledge of the Kawa model, and the model's utility for collaboration. **Results:** Outcomes showed overall mean improvements in agreement that the Kawa model provides a common method of communication, and 100% of the participants agreed or strongly agreed that use of the Kawa model can improve acute care rehabilitation team collaboration. Qualitative post-survey responses indicated an enhanced understanding of the components of effective team collaboration. **Conclusions & Recommendations:** Team collaboration was cultivated with use of the Kawa model. The model provided a successful method for the acute care team to openly discuss and collaboratively problem-solve how to maximize their team flow. Further study of the Kawa model's utility to improve collaboration in various contexts with broader participant groups is recommended, as well as study of longitudinal effects of a teambuilding intervention with use of the Kawa model.

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Cultivating Acute Care Rehabilitation Team Collaboration Using the Kawa Model

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ABSTRACT
Purpose: Effective healthcare team collaboration is imperative for quality client-centered care, job satisfaction, and overall morale. Rehabilitation team collaboration can be impacted by high productivity demands, differing backgrounds of individual team members, and the unpredictable healthcare environment. The Kawa (river) model, a culturally-neutral model of occupational therapy practice, has been shown to improve communication and collaboration with its use of metaphors, but its utility in various contexts to enhance collaborative practice is still being explored. The purpose of this study was to implement an evidence-based teambuilding intervention with use of the Kawa model to investigate the impact on acute care rehabilitation team collaboration. **Method:** A 5-week pretest-posttest study was completed with a group of eight rehabilitation team members, consisting of occupational therapists, physical therapists, and a speech language pathologist, in an acute care setting. Pre and post-surveys were utilized to gather quantitative and qualitative data on perceptions of team collaboration, knowledge of the Kawa model, and the model's utility for collaboration. **Results:** Outcomes showed overall mean improvements in agreement that the Kawa model provides a common method of communication, and 100% of the participants agreed or strongly agreed that use of the Kawa model can improve acute care rehabilitation team collaboration. Qualitative post-survey responses indicated an enhanced understanding of the components of effective team collaboration. **Conclusions & Recommendations:** Team collaboration was cultivated with use of the Kawa model. The model provided a successful method for the acute care team to openly discuss and collaboratively problem-solve how to maximize their team flow. Further study of the Kawa model's utility to improve collaboration in various contexts with broader participant groups is recommended, as well as study of longitudinal effects of a teambuilding intervention with use of the Kawa model.

Keywords: Kawa model, team collaboration, rehabilitation, acute care, teambuilding

INTRODUCTION
Background & Literature Review
In today's unpredictable healthcare environment with high rehabilitative productivity demands, team collaboration may be overlooked. Additionally, the fast-pace of acute care may interfere with effective collaboration. A lack of understanding of fellow team members' roles, backgrounds, personal circumstances, and professional challenges can also create barriers to rehabilitative team collaboration.[1] Other potential reasons for decreased team collaboration are historical interprofessional conflicts, and differences in culture, professional jargon, qualifications, and schedules.[2] Poor collaboration among an interprofessional healthcare team can negatively impact the quality of service delivery and patient care.[3] In addition, it can reduce team morale, productivity, and job satisfaction levels.[4]

While there are definite barriers to collaboration, routine open communication within a respectful environment can help eliminate identified barriers and facilitate collaborative practice.[2,5] The benefits of effective collaboration are numerous, including improved quality of client-centered care, clinical outcomes, job satisfaction, and reduced turnover rates.[3,4,6,7] Clearly, there is value in identifying a successful approach to improve team collaboration to promote team and patient satisfaction, and positive patient outcomes.

Teambuilding has been used to promote collaboration. A comprehensive literature review identified goal setting, interpersonal relations, problem-solving, and role clarification as four components of team building interventions.[8,9] All four components were found to improve team functioning and to have a positive impact on team processes, such as communication and collaboration.[8] Teambuilding activities utilized to promote team collaboration may include sharing personal trivia and interests, open discussions about roles, personality and communication styles, conflict resolution strategies, effective communication skills, activities highlighting team strengths, weaknesses and team goals, and group problem solving.[4,10-12] Until recent exploration of the Kawa model, literature identifying a specific approach or guiding model that incorporates all the components of team building interventions has been sparse.

The Kawa model is a culturally-responsive conceptual model of occupational therapy practice that focuses on the contexts that impact the flow or harmony in life, rather than mainly focusing on the individual client.[13] Kawa is the Japanese word for "river," which is used as a natural metaphor to portray life's journey.[14] The river water represents life's flow and health; driftwood represents personal assets and liabilities; rocks represent life circumstances and problems; the river walls represent physical, social, and environmental factors.[13] These elements are interrelated and influence the overall flow of life.[13]

The general aim of the Kawa model is to improve harmony between the interrelated constructs and enhance the individual client's well-being in the overall context.[13] Historically, the Kawa model has been utilized in occupational therapy practice to promote client-centered open discussion.[15] The model has been shown to enhance the client-practitioner therapeutic relationship and to support decision-making in the collaborative occupational therapy process in various clinical service delivery areas, such as mental health and community-based settings.[15,16] In practice, the client may be guided to draw an actual visual representation of his or her current life flow (river) to view the constructs in an interconnected way. The practitioner then uses this information, in collaboration with the client, to consider how influencing factors (driftwood) may be utilized to push away what is impeding flow (rocks) and create more space for the river to flow more effectively.[14] The Kawa model's use of metaphors creates a culturally-neutral platform for open dialogue, which promotes enhanced expression and interaction, enabling a collaborative partnership.[15,16] In this study, the model's utility to enhance collaboration and harmony is being explored beyond its traditional design.

An exploratory study by Lape and Scaife suggested that the Kawa model's features of enabling greater communication and collaborative relationships match the features listed for teambuilding in the literature.[1] The study utilized focus group sessions with interprofessional rehabilitative teams of similar size and composition at two different skilled nursing facilities to generate ideas and identify potential applications of the model. Based on the outcomes, the authors recommended further research on the model in relation to teambuilding and interprofessional collaboration.[1] A recent pilot study by Lape et al. responded with an examination of the model's utility for interprofessional collaboration.[17] They provided an introduction of the Kawa model to an interprofessional team in a skilled nursing facility and then asked them to apply the model to a case study.[17] The pilot study concluded that the Kawa model is an effective tool to increase interdisciplinary team collaboration and provides a common language for interprofessional collaborative discussions regarding client care.[17] However, the model's utility for teambuilding was never tested and no studies to date have taken place in an acute care setting, leaving a need for further examination. Therefore, the purpose of this study was to investigate the impact of a teambuilding intervention with use of the Kawa model on acute care rehabilitation team collaboration.

METHODS
Study Design
A mixed method pretest-posttest study design was chosen to investigate the impact of this unique intervention on team collaboration. Based on the literature, a comprehensive evidence-based teambuilding intervention with the use of the Kawa model was developed. The study was approved by the hospital's rehabilitation company and the Internal Review Board of Chatham University in Pittsburgh, Pennsylvania, United States. Informed consent was obtained from all participants prior to beginning the study. The 5-week intervention included both individual and group sessions with an acute care rehabilitation team and utilized the Kawa model as a platform to address the four components of team building interventions. The individual and group sessions were conducted by the first author, who was an experienced rehabilitation team member, and a content expert. This design was purposefully chosen as she was respected by fellow team members, yet had no authority over them so as not to influence their participation. In addition, her extensive knowledge of the Kawa model allowed her to effectively deliver the intervention competently.

Study Participants
Purposive sampling was used to recruit a rehabilitation team from one suburban hospital in Pennsylvania. All regularly scheduled acute care rehabilitation staff members volunteered to participate. The rehabilitation team participants (n=8) consisted of four physical therapists, three occupational therapists, and one speech-language pathologist. The academic degrees held among the group included two Bachelor's, four Master's, and two Doctorate degrees. The total years of experience working in the field of rehabilitation in any setting ranged from 11 to >20 years, and the number of years as a member of this acute care rehabilitation team ranged from 1 to 15 years. Participants ranged in age range from 30 to 69 years old, with 75% between 30 and 49 years old. Complete demographic details of the participants are included in Table 1.

Table 1: Participant Demographics

Participant	Total Years in a Rehab Setting	Total Years in this Acute Care Team	Academic Degree	Age Range in Years
1	11 to 15	1 to 5	Master's	30 to 39
2	11 to 15	6 to 10	Master's	30 to 39
3	16 to 20	1 to 5	Master's	30 to 39
4	16 to 20	1 to 5	Bachelor's	40 to 49
5	> 20	6 to 10	Bachelor's	40 to 49
6	> 20	11 to 15	Doctorate	40 to 49
7	> 20	1 to 5	Doctorate	50 to 59
8	> 20	11 to 15	Master's	60 to 69

Procedures
The study began with the administration of the pre-survey to gather baseline data regarding perceptions of team collaboration and knowledge of the Kawa model. The participants were instructed not to include any personal identifiers on their surveys and to return their completed surveys to a locked drop box. Then, the teambuilding intervention was implemented over a period of 5 weeks, with weeks one and two conducted individually, weeks three and four occurring in small groups, and week five consisting of a full team meeting. The first author served in the role of educator in weeks one and two, and as a facilitator in weeks three through five. During group and team activities, the participants were asked to view the facilitator as a neutral moderator; the facilitator was available to answer questions about the activities, ensure the agenda was followed, and the meetings concluded on time. Discussion flowed naturally throughout the group meetings, with occasional neutral prompting by the facilitator to engage all participants in the discussion. The participants were advised to share only information with which they were comfortable. Each participant completed a post-survey at the end of the teambuilding intervention to elicit his or her views on team collaboration and the impact of the Kawa model for this purpose. The weekly format, topic, and time commitment are further clarified in Table 2.

Table 2: Study Procedures

Week	Format	Topic	Time Commitment
Pre-intervention	Individual	Pre-survey	15 minutes
1	Individual	Introduction, Evidence-Based Practice, & Team Collaboration	45-60 minutes
2	Individual	Education on the Kawa Model	30-45 minutes
3	Small Group (n = 4)	Goal Setting & Interpersonal Relations	45-60 minutes
4	Small Group (n = 4)	Problem Solving & Role Clarification	45-60 minutes
5	Whole Team (n = 8)	Team Collaboration with the Kawa Model	60 minutes
Post-intervention	Individual	Post-survey	15 minutes

Weeks one and two included two individual face-to-face educational meetings for all participants consisting of a PowerPoint presentation to depict the topics. These interactive educational sessions were scheduled at each participant's convenience and offered an introduction to the study, education on evidence-based practice, team collaboration, and the Kawa model. These meetings concluded with an overview of the content and schedule for the team meetings planned for the following three weeks.

In week three, the participants were split into two groups of four, based on their schedules for convenience; both groups followed the same agenda. This week focused on goal setting and interpersonal relations. Both small group meetings began with reviewing the company's core values and discussing how these values were applicable goals for the rehabilitation team. Next, each participant completed an animal personality test as an interpersonal relations teambuilding activity and discussed ideas about similar and different personality types. Participants were also guided to draw individual Kawa river model diagrams, including their river water (life flow, well-being) and driftwood (personal traits, strengths, and weaknesses). Lastly, the participants were invited to share the features of their individual river models and noticed all rivers were drawn uniquely. A deeper discussion developed with the use of the individual models as participants shared their internal perspectives from their diagrams, such as personal goals, struggles, and successes.

The fourth week followed the same small group meeting format as week three, with the participants in two groups of four. Three out of four members were the same as the previous week, with two participants switching small groups for convenience. Week four focused on problem-solving and role clarification. The meetings began with the participants completing their individual Kawa river model diagrams by adding rocks (problems, challenges) and river walls (environmental factors, supports). The groups discussed their river walls, discovered similar features, and identified co-workers as a valuable support to their life flow. The model features (rocks, river walls, and driftwood) were further discussed in relation to problem-solving through personal barriers, as well as role clarification by taking turns verbally sharing strengths and supports.[18] Participants provided written advice to each other on how to overcome an identified challenge and also paired up to talk for three minutes each about accomplishments, strengths, and valued roles.[18] During group discussions, participants expressed that it was nice to talk on a deeper level and share perspectives, instead of making assumptions.

The fifth and final team meeting included the whole participant group (n=8). The focus of the meeting was to bring all the concepts together from the previous weeks and to cultivate team collaboration with use of the Kawa model. The whole team collaborated to create one large team Kawa (river) model diagram on a large whiteboard. The Kawa model's metaphors were used as a common way for the team members to identify and communicate the team's goals (river water), strengths and weaknesses (driftwood), supports (river walls), and barriers (rocks) to the team's collaborative flow. All members contributed to the components of the model verbally with constant and free-flowing conversation, while the facilitator and a couple of team members volunteered to add what was being said to the whiteboard. When the participants agreed the model was complete, the facilitator prompted the team to collaboratively develop one list of options that would create spaces to improve the river flow to reach the team's goals.

The study concluded with each participant completing a post-survey within a week of the final session to evaluate the impact of the intervention. The large white board with the team's river model diagram was left on display in the rehabilitation department for

the participants to view throughout the following week. The locked drop box was available in the department for the participants to return the survey at their convenience.

Outcome Measures
Author-generated pre and post-surveys were utilized to measure the quantitative and qualitative outcomes of the intervention. To reinforce content validity, the quality and usefulness of the surveys were reviewed by experts in survey design and by non-involved acute care rehabilitative therapists from another site.[19] Minor changes were made based on the feedback to create the best version. The pre-survey was administered prior to the start of the intervention and consisted of seven 5-point Likert-scale questions, three open-ended questions, and five demographic questions. The post-survey was provided to participants at the conclusion of the intervention and was identical to the pre-survey, excluding the demographic questions. The three open-ended qualitative questions prompted the participants to narratively list one to three: 1) valuable qualities of a collaborative team member, 2) barriers to team collaboration, and 3) ways to improve team collaboration. The surveys were administered in paper format. Field notes were also taken by the facilitator during group discussions; however, the primary means to gather participant feedback was the use of the confidential pre and post-surveys.

Data Analysis
There was a 100% response rate for the pre and post-surveys. The responses to the seven 5-point Likert-scale statements were coded from strongly disagree (1) to strongly agree (5). The quantitative data were organized in an Excel workbook, analyzed, and compared using descriptive statistics to determine the mean and mode responses. Further statistical interpretations were limited due to the study's small sample size and purposive recruitment design.

The qualitative survey data from the three open-ended questions were analyzed through content analysis to identify common themes and the quality of responses pre and post-intervention were compared. Due to the relatively small sample size, data were hand-coded by the authors using a word-based technique by looking for repetition of terminology across responses. To improve credibility authors independently coded the responses for commonalities and then compared findings for discrepancies. Upon discussion, it was evident that the independently identified themes reflected the same ideas and the best terminology to describe each theme was determined cooperatively.

RESULTS
Quantitative Results
Pre and post-survey averages revealed increased agreement for all seven Likert scale statements (Figure 1). Overall, the improvements ranged from 0.12 to 3.13 points on a 5-point Likert scale, with a mean positive change in agreement of +1.11 points towards strongly agree (5). The largest improvement was in familiarity with the Kawa model (+3.13 points), and the smallest was in team collaboration benefits (+0.12 points).

Pre-intervention, the group's mean (M) scores reflected a response of undecided if their acute care rehabilitation team clearly communicated (M = 3.25) and effectively collaborated (M = 3.38). Also, 63% were undecided if the use of the Kawa model could provide a common method of communication (M = 3.5) or improve overall team collaboration (M = 3.5). Post-intervention, the group agreed that their team clearly communicates (M = 4.0), and effectively collaborates (M = 4.25). Additionally, 75% strongly agreed (5) that use of the Kawa model can provide a common method of communication (M = 4.5), and 100% agreed (4) or strongly agreed (5) that use of the model can improve overall acute care rehabilitation team collaboration (M = 4.75).
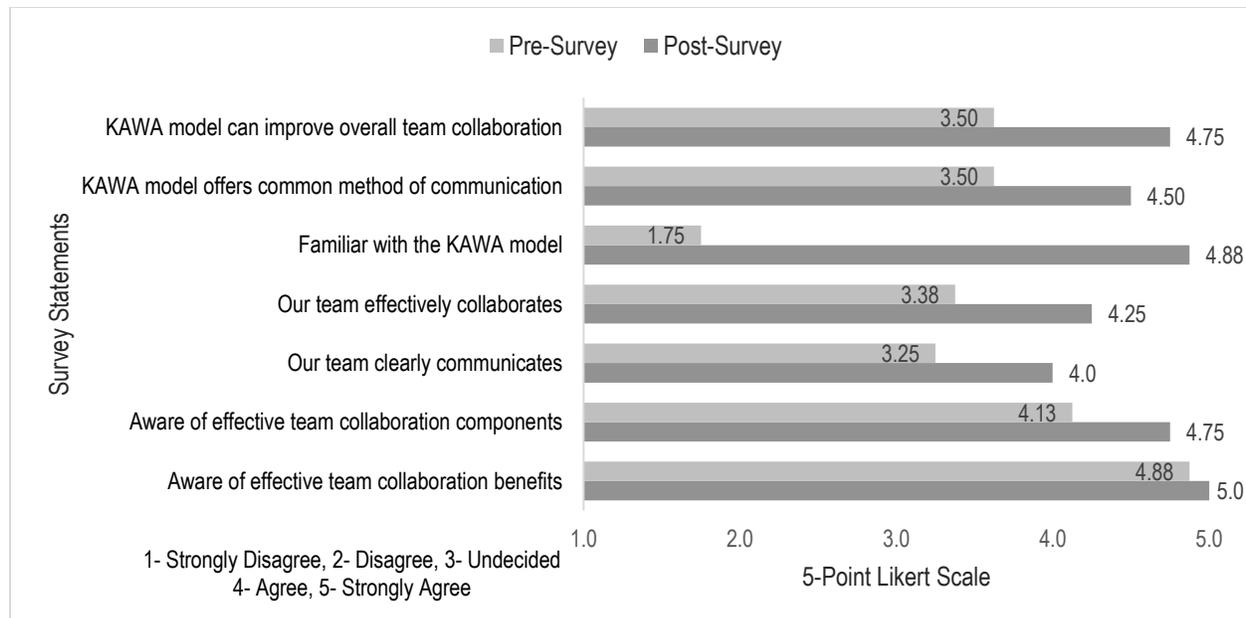
Figure 1: Mean Level of Agreement with Survey Statements Pre and Post-Intervention (n = 8)

Qualitative Results

A comparative analysis determined there were clearly identified themes for each question related to the participants' overall perceptions of team collaboration, although there were specific differences in the quality of the pre and post-survey responses. The following themes were revealed related to team collaboration from the participants' most common responses:

Valuable collaborative team member qualities identified were: effectively communicates/listens, respectful/approachable, and knowledgeable/professional. The pre and post-survey responses were similar in identifying these key qualities. Though, while "knowledgeable" was listed on the pre-survey, the post-survey included enhanced descriptions of characteristics of a knowledgeable team member, such as professionalism, being innovative, and current with research.

Barriers to team collaboration identified were: lack of communication, lack of time/different schedules, and interpersonal skills/qualities of individual team members. A lack of communication and time were consistently identified as barriers to collaboration on the pre and post-surveys. Regarding the barrier of interpersonal skills/qualities, or lack thereof, of individual team members, the pre-survey responses focused primarily on negative personal qualities such as making assumptions, being closeminded, argumentative, selfish, or unreceptive to feedback. Conversely, the post-survey responses included terminology more reflective of recognition and respect for individual differences such as different personalities, communication or learning styles, individual biases, and varying emotional intelligence.

Facilitators of team collaboration identified were: consideration of other perspectives, established communication systems, and scheduled team meetings. These facilitators were commonly listed on both the pre and post-surveys. Notably, the pre-survey responses were more general, suggesting regular communication and meetings. On the post-survey, the participants listed more creative strategies to improve team collaboration, such as team goal setting, a journal group, and the use of technology/apps. Some of these strategies matched the options that the team collaboratively discussed during the team river model activity.

DISCUSSION

This study was developed to determine if acute care rehabilitation team member collaboration could be improved with the use of the Kawa model. Incorporating the four components of team building interventions (goal setting, interpersonal relations, problem solving, and role clarification) with use of the Kawa model, was an ideal design for this intervention to enhance rehabilitation team collaboration.[1,8] There were both quantitative and qualitative findings that illustrate the positive impact of using the Kawa model in this way.

The quantitative results that demonstrated the largest increase in agreement were in understanding the Kawa model. Considering that this culturally-responsive framework is a newer model and the members had all been practicing from 11 to over 20 years, this

finding was anticipated. The second largest change was in agreement that the use of the Kawa model could provide a common method of communication and that the model could improve team collaboration. Most of the participants were undecided about the model's utility pre-intervention but agreed post-intervention that the model could be used as a communication method to improve collaboration. These findings support the literature that the Kawa model's use of metaphors creates a neutral platform for open discussion that facilitates a collaborative process.[15-17]

The model's utility for enabling deeper discussion was observed during the first small team meeting when the participants began creating their individual river model diagrams and started sharing their personal traits, strengths, and weaknesses (driftwood); the discussion markedly increased and appeared more meaningful. This unique discussion platform created a path for valuable communication, and effective communication has been shown to facilitate team collaboration.[5,20,21] The increased agreement on the post-survey that the team clearly communicates is consistent with the literature showing the model enables a greater degree of expression and provides a common language for interprofessional collaborative discussions.[15,17] Additionally, the study's results showed increased agreement that the team effectively collaborates after teambuilding with the Kawa model. These results directly support Lape and Scaife's suggestion that the model can be an effective teambuilding tool for collaboration among rehabilitative professionals.[1] Lastly, the quantitative results also indicated small but notable improvements post-intervention in the team's awareness of effective team collaboration benefits and components.

The commonly identified valuable qualities of a collaborative team member noted in this study correspond with those stated in the literature including motivation, commitment, flexibility, and willingness to share.[20] Characteristics listed by study participants included being hardworking, flexible, and open. The importance of being able to effectively communicate in a professional manner was also highlighted as a valuable quality. Post-intervention, the participants described qualities conducive to collaboration with more detail, which suggests that the teambuilding intervention may have prompted the participants to think beyond basic pleasantries and reflect more on their own qualities. For example, before the intervention, one participant only noted "good listening" as a valuable quality of collaboration; after the intervention, her response expanded to include communication, availability, and flexibility.

The qualitative data concerning barriers to team collaboration suggest that negative individual personal qualities, poor interpersonal skills, and a lack of effective communication can result in team conflict and division. This data aligns with barriers noted in the literature including a lack of communication, inflexible team meeting times, and unavailability of all members.[5] The team in this study further identified that assumptions and different personalities can create barriers, which aligns with literature suggesting that different backgrounds, roles, and values can create challenges for teamwork.[1,22] Specifically, multiple responses on the pre-surveys indicated lack of respect as a barrier to collaboration. However, there was no mention of lack of respect on the post-survey but instead, descriptors such as having different learning or communication styles, diverse goals, and individual biases were used. This difference suggests that participants may have an improved understanding post-intervention of how different roles and approaches could impact team collaboration and that individual differences do not necessarily equate to disrespect. Conceivably, this signifies the Kawa model may be an effective tool to improve awareness and appreciation of various backgrounds and perspectives of team members. This finding aligns with Lape and Scaife's observation of positive changes in attitudes and the overall work culture after use of the model.[1]

Regarding facilitators of team collaboration, the participants listed more specific strategies to improve team collaboration on the post-survey, which suggests the intervention may have prompted a greater focus on team goals and reflection on potential plans for goal achievement. For example, responses on the pre-survey included a need for scheduled team meetings, but responses on the post-survey included more thoughtful suggestions of what might occur in these meeting times, such as time for team goal setting or a journal group. These responses highlight the fact that simply meeting as a group does not translate into effective collaboration. The method and structure of communication, as well as the established team culture, have the greatest impact on effective collaboration as suggested in prior studies.[1,20,21]

Generally, the barriers and facilitators of team collaboration noted by the participants in this study align with those reported in the literature, indicating that the participant group was representative of a typical rehabilitation team.[5,20,21] However, overall post-survey responses to the open-ended questions were of higher quality and greater detail, indicating that use of the Kawa model as the foundation for this evidence-based teambuilding intervention likely encouraged greater levels of collaboration and reflection. This notion is also supported by the quantitative findings, which show that 75% of the participants strongly agreed that use of the Kawa model can provide a common method of communication, and 100% agreed or strongly agreed that use of the model can improve overall acute care rehabilitation team collaboration.

Limitations

The small purposive sample creates a limitation in generalizing the results to other populations. While the size and composition of the rehabilitation team represent a typical team, all participants were over the age of 30 with at least 11 years of rehabilitation experience; this advanced experience level may have impacted perceptions of team collaboration or underscored the need for teambuilding interventions. Another potential limitation is the established relationship between the first author/facilitator and the participants which could create bias. In addition, the surveys were author-generated which limits the validity of the outcome measures. However, the surveys were piloted, and a second review and analysis of the results by the co-author support the credibility of the outcomes. While the Kawa model has the potential to be used across disciplines, its use of metaphorical thinking and origins in the Eastern world may not be valued in some workforces. Finally, given the 5-week duration of the study, longitudinal effects could not be measured.

CONCLUSIONS & RECOMMENDATIONS

The outcomes of this study support the use of the Kawa model to improve acute care rehabilitation team collaboration. The Kawa model provided an effective method for the acute care team to organize, visualize, and openly discuss their goals, barriers, facilitators, and supports. Use of the Kawa model also facilitated an enhanced appreciation of differing perspectives among team members that may have been previously misunderstood. This study provides support for use of the Kawa model as a platform to collaboratively problem-solve challenges that may arise among the team in the future.

Recommendations include a follow-up to the teambuilding intervention with biannual use of the Kawa model to re-examine and collaboratively discuss the team's well-being (river flow). Longitudinal evaluations of teambuilding interventions showed results were not maintained over time and improvements may be lost after 6 months without follow-up activities.[11,12] Study of the longitudinal outcomes of a teambuilding intervention with the use of the Kawa model is recommended, perhaps over the course of a year. Further study of the Kawa model's utility to improve collaboration in various contexts with larger participant groups is recommended to further develop the literature and provide valuable information for other professionals interested in cultivating collaboration.

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