Exploring Teamwork Dynamics in Medicine Clerkship

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Abstract

Background: Medical students collaborate with one another, during problem based learning sessions and clerkships. Teamwork has three components; input, process and outcome. Team Objectively Structured Bed side Assessment (TOSBA) is a tool used in clerkships to assess the outcome of team work. Team dynamics have not been previously elaborated. In the present study team dynamics will be explored using examiner observations in TOSBA as a reference.

Aim: To explore the teamwork dynamics in settings of TOSBA among final year medical students during their clerkship rotation to medical wards, taking examiner observations of TOSBA as a reference.

Methods: A qualitative study using focus groups and purposive sampling. Perceived team dynamics among these students were compared to the observed dynamics by examiners in the earlier settings of TOSBA.

Results: Three themes; factors positively affecting the negatively influencing the team dynamics and suggestions to improve team dynamics were generated. Team dynamics were negatively influenced by social loafing and Belbin role as a shaper or team’s worker. Role of mutual trust and pre-tasking to enhance team dynamics needs exploration.

Conclusion: Many factors affect the team dynamics during TOSBA. Social loafing, mutual respect and pre-tasking are new themes that require further elaboration.

Keywords: Team, Collaboration, dynamics

Introduction

Teamwork is one of the important tasks to be learned by a medical professional. Medical students experience collaboration during problem based learning sessions and clerkships. It has not given adequate weightage in
assessment as undergraduate medical curriculum is mainly focused on individual assessment (Dijkstra, Latijnhouwers, Norbart, & Tio, 2016). The Canadian Medical Schools (Can Meds) have identified seven roles of a physician's competence, one of which is a Collaborator.

Teamwork is actually visualized as having three team components; input, process actually looking at the team dynamics and the outcome (Magrane, Khan, Pigeon, Leadley, & Grigsby, 2010). There is modest knowledge at present about the actual process of teamwork in which members participate and interact to work as teams (Stewart, Fulmer, & Barrick, 2005).

Teams bring together people with different experiences, values, and knowledge and are more effective in adequately solving the problems than are individuals. However, they face challenges of different perspectives of team members and developing an understanding of the problem. Development of shared cognition is the central concept that helps in people working in close collaboration (Piet Van den, Wim H., Segers, & Kirschner, 2006).

A model proposed by Bossche and colleagues elaborated factors that influence the team dynamics and include; task and relationship conflicts, psychological safety, group potency and inter-dependence. Conflicts may lead to opposition, emotional rejection and can interfere with team performance hence task and social cohesion is vital to improve team outcomes.

Team Objectively Structured Bedside Assessment (TOSBA) is a novel tool to assess teamwork during bedside teaching (Miller, Butler, Meagher, Costello, & McElvaney, 2007)(Meagher, Butler, Miller, Costello, et al., 2009). Previous studies have used this instrument in quantitative studies for formative assessment of students (April, Jain, Kumar, & Tankhiwale, 2016). The present study will explore their perceived team dynamics when they interact during TOSBA. This study will help educators and health care workers to better understand the role of team dynamics and collaborative work in medical schools and health care settings.

The aim of this study was to explore the teamwork dynamics in settings of TOSBA among final year medical students during their clerkship rotation to medical wards, taking examiner observations of team dynamics as a reference.

Methods

It was a qualitative study using focus groups, carried out in Department of Medicine and Pulmonology Fauji Foundation Hospital Rawalpindi from October 2016 to June 2017. Ethical approval was taken from the concerned Ethical Review Committees (Foundation University Medical College Rawalpindi - No 217/FF/FUMC/ERC) and informed consent was taken from the participants. The study was conducted on final year medical students of Foundation university medical college on clerkship rotations to medical wards.

After conducting TOSBA sessions on 100 students divided into 22 teams, and noting examiner observations on team dynamics, three focus groups were conducted including twelve students using purposive sampling.

Observer notes:

One of the advantages of TOSBA over OSLER is the direct observation of teams, during the process of history taking and examination (Meagher, Butler, Miller, Richard, et al., 2009). Two observers, who were actually the trained examiners, observed students during sessions of TOSBA. The purpose of observation was twofold; one to monitor students during history and examination to enhance the objectivity of TOSBA. Secondly, to examine the
team dynamics during these sessions, so that they could be compared to the perceived dynamics by team members, during focus group sessions.

**Conducting Focus groups:**

Team dynamics that were involved during TOSBA sessions were explored using focus groups. Based on maximum variation sampling for qualitative data, three focus groups were arranged. Twelve team members participated in these sessions. Questions were asked from the participants till saturation was achieved and no new ideas were being generated. The length of each session lasted 1-1.5 hours. A note taker wrote down notes (Stalmeijer, Mcnaughton, & Van Mook, 2014). Audio recording of all focus group sessions was conducted.

Questions were formulated on Tuckman stages of forming, storming, norming, performing and adjourning (Bonebright, 2010). Belbin roles and identified themes from model of Bossche and colleagues were incorporated into the questions. These questions are given in annex 1.

Data was transcribed after tallying the notes of the researcher, the note taker and the audio-recording. Member checking was done with the participants to avoid wrong documentation and for purpose of triangulation. Trustworthiness of data was ensured by member checking, triangulation, explaining the context, identifying themes from literature and asking same questions in focus groups from all participants.

The final data was transferred into N-VIVO software. Open and then axial coding was done. Later core categories and themes were identified. Coding was mainly done at the manifest level.

**Results**

The core categories, themes and codes identified from literature search and those elaborated during focus group sessions are given in table 1.

The students overall rated good experience of TOSBA sessions. Positive team dynamics included good collaboration among team members, interdependence, development of shared cognition and effective task and social cohesion. Important factors identified by students for negative team dynamics in TOSBA included, social loafing, specified Belbin roles, task, relationship and process related conflicts.

Students gave few suggestions to improve team dynamics in future. These included themes like role of leadership, mutual respect, pre-tasking and disciplinary action against social loafers. These are explained in detail in annex 2.

Few new themes were identified in this study. These themes include social loafing; an important factor responsible for negative team dynamics. Few suggestions to improve team dynamics were not identified in literature search, including mutual respect, pre-tasking and disciplinary action against social loafers.

**Themes from Observer notes:**

Observer notes in TOSBA were compared to the perceived team dynamics by medical students. Most of the teams experienced through the Tuckman stages of team dynamics (Bonebright, 2010). Teams with high team scores had minimal or no conflicts. Social loafing could be a phenomenon in high scoring teams. Team workers were there in high scoring teams but usually no shaper (Aritzeta, Swailes, & Senior, 2007).
Teams with medium or low scores were dominated by team conflicts. Task, relationship and process related conflicts were present. Most conflicts were related to leadership problems. A shaper was the most problematic person of a team, as he was not the true leader but a provocative person. Teams with shaper as a role, usually were medium or low in their team scores.

Discussion

In our study, a detailed set of questions were asked to get an in-depth understanding of TOSBA experiences especially the team dynamics.

Collaborative learning has been described in the past to improve the team dynamics and also leading to better outcomes in teams (Kirschner, 2006). This concept has been further enhanced by the present study, as students reported better team dynamics by improved collaboration.

Interdependence has also been linked to better team functioning as seen by Bossche and colleagues (Kirschner, 2006). It is the link between team members when working as a group. Interdependence on fellow team members is both related to execution of tasks and for better performance. It was shown to be an important factor responsible for better team dynamics in our study.

Shared cognition is the mutually built understanding of the given task and is based on the inputs for all the members of a team. Members build a collective wisdom while working as a team (Kirschner, 2006). This concept has been further strengthened in the present study.

When team members pass through stages of forming, storming and norming, they have developed task and social cohesion. This is due to the unwritten agreement of the members to remain in the group and work collectively in the performing stage (Kirschner, 2006). This leads to a friendly relationship among the team members that even after adjourning stage, when they get detached, they like to work in the same group in future. Team cohesion has been an important factor that led to improved team dynamics in the present study, giving strength to the conceptual model by Bossche and colleagues.

The themes that unfavorably affected the team dynamics included; Social loafing, certain Belbin roles, task, process and relationship conflicts.

Many teams described their teams had no conflicts, while few described important conflicts that arise during teamwork. Most conflicts were related to dominance or leadership. Many students thought that these conflicts were responsible for their inadequate performance. Studies done by Bossche and colleagues also identified process related conflicts including leadership as one of the factors responsible for poor teamwork dynamics. In the present study, certain Belbin roles were identified that had a negative influence on team dynamics. These included, a shaper and a team worker (Henry & Stevens, 1999). A shaper, as described by Belbin, is that member of a team who becomes a leader and tries to manipulate the functions of a team. He is very bossy, impatient and get irritated easily. He tries to lead his team by his own will (Aritzeta et al., 2007). Studies in the past have also identified shaper as having negative role on team dynamics (Henry & Stevens, 1999).

A team worker is that member of a team that mediates functions of a team. He does not have a vision of his own and doesn't take initiative. He usually obeys the orders of his team mates. He is useless when crisis occurs in a team (Henry & Stevens, 1999). The role of team worker need further elaboration.
Social loafing was a new concept presented in the present study. It is the reduced effort of team members when working in a team, than when performing alone (Williams et al., 1991). Previous studies have shown, than social loafing occurs by exception in teams. However, the present study has demonstrated an important consequence of social loafing on negatively influencing the team dynamics (Klug & Bagrow, 2016). According to Karu and Williams, factors that affect social loafing include low motivational level of the student and assessment at the level of team than individual assessment in team. Studies have shown that as the team cohesion enhances, social loafing is reduced. Similarly, if students have specified role to play in a team, this factor can be reduced. Social loafing needs special attention and must be evaluated in future studies.

The final year students provided few suggestions to improve team dynamics. These included; role of an effective leadership, mutual respect, pre-tasking and disciplinary action against social loafers.

Leadership has been extensively investigated in the past. Effective leaders lead their teams to the heights of success and glory. Belbin described the role balanced teams as highly effective (Aritzeta et al., 2007). In a study by Henry and colleagues, single leader-led team is likely to have a better dynamics with improved team outcomes (Henry & Stevens, 1999). However in the present study, students advocated a balance leader "who is not a dictator", and fits into the role of chairman advocated by Belbin (Henry & Stevens, 1999). Further studies are required in this aspect.

Mutual respect has been an agreed term, used by the final year students, a suggestion to improve dynamics in a team. Few studies have identified mutual respect, as an important factor for enhanced team dynamics (Mickan & Rodger, 2005)(Edmondson, 2009). Psychological safety advocated by Bossche and colleagues is a related term.

Students also advocated some form of pre-tasking to be linked to teamwork, to enhance its dynamics. This may be in the form of individual or group assignments, homework, preparation and so on. Further studies are mandatory to analyze this attribute.

It is the pioneer study incorporating qualitative data with TOSBA experience. Many new concepts emerged from our study that influenced the team dynamics like role of social loafing and team’s worker contribution in negatively influencing the team dynamics. Few suggestions also need further elaboration including role of mutual trust and pre-tasking Studies are required to compare mutual respect in our study with psychological safety as advocated by Bossche and colleagues (Piet Van den et al., 2006).

Limitations:

Few of the limitations of our study are given below:

Our study incorporated focus groups. Due to feasibility issues two students with high individual scores; and one each from medium and low individual scores were selected with a total of twelve students. Students were interviewed on their experience of TOSBA for five weeks only. This is a source of bias in our study and must be dealt with in future research.

Recommendations for future research:

As this study used a conceptual model used by Bossche and colleagues, hence there was no generation of model. Future studies based on principles of generalizability are required. New model may be designed to incorporate the three important factors to improve team dynamics in our study, namely, social loafing, mutual respect and pre-tasking.
Take Home Messages

Our study shows that few factors favorably influenced the team dynamics including collaboration among team members, interdependence, shared cognition and team cohesion. Few factors negatively affected the team dynamics; Belbin roles of a shaper and a team worker, social loafing and conflicts. Final year medical students gave few suggestions to improve team dynamics, including role of leadership, mutual respect and pre-tasking.

Notes On Contributors

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## Table 1: Codes and Themes

| Core categories          | Themes and codes identified from literature | Themes and codes identified in our study |
|--------------------------|---------------------------------------------|----------------------------------------|
| Positive Team Dynamics   | Collaboration                               | Collaboration among team members       |
|                          | Interdependence                             | Interdependence                        |
|                          | Shared cognition                            | Shared cognition                        |
|                          | Team Cohesion                               | Team cohesion                           |
| Group potency            |                                             | Social cohesion                         |
| Psychological safety     |                                             |                                        |
| Negative Team Dynamics   | Belbin roles                                | Specified Belbin Roles                  |
|                          | Relationship conflicts                      | Conflicts:                              |
|                          |                                             | Task conflicts                          |
|                          |                                             | Relationship conflicts                  |
|                          |                                             | Process related conflicts               |
|                          |                                             | Social loafing                          |
| Suggestions to improve  | Leadership                                  | Leadership has a vital role             |
| team dynamics            |                                             |                                        |
|                          |                                             | Mutual respect is mandatory             |
|                          |                                             | Pre-tasking is required                 |
|                          |                                             | Disciplinary action against social loafers |

### Annex 1: Questions asked during Focus Groups

- [Link to Annex 1](https://doi.org/10.1111/j.1744-6570.2005.00480.x)
### Annex 2: Themes and Codes in Focus Groups

| Core categories          | Themes       | Statement of members in focus groups                                                                                                                                                                                                 |
|--------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Positive Team Dynamics   | Collaboration| “All the members were very cooperative and there was good interaction with them”  
“My positive team experiences include that we really worked as a team regardless of gender discrimination, there was coordination, collaboration” |
|                          | Inter-dependence | “I was not very good at history taking and I learnt the art of history from others. It was my first time that I could present the history in fluent English in-front of the examiners. We learnt making a differential diagnosis and clinical examination with the help of each other.” |
|                          | Shared Cognition | “I was helped by one of my team members in performing examinations. I initially don’t know how to do clinical examination correctly.”  
“When anyone of us picked findings, we tried to confirm it with other team members, this brought confidence.” |
|                          | Team cohesion | “We were task focused and discussing with each other. There was complete task and team cohesion”  
“There was a good teamwork demonstrated by our team. One took history, others helped, one was doing examination, and another was busy in scrolling the books to get D/D. All the members actively participated.” |
### Negative Team Dynamics

#### Social Loafing

“Negative team experiences include our non-serious attitude when we worked together. In our team, there were all girls, so when we were together, doing a task, we started laughing in front of the patient. We later realized, it was not a good conduct”

#### Specified Belbin roles:

Certain Belbin roles were unfavorably affecting the team dynamics. Team worker and shaper were considered by team members as undesirable for a good team.

1. **Team worker:** A team worker is that member of a team that mediates functions of a team. He does not have a vision of his own and doesn’t take initiative. He usually obeys the orders of his team mates. He is useless when crisis occurs in a team

   "Teamwork was there but two members were not very participatory. They were at back foot. They wanted cooked food.”

   "Initiatives were not there in few members but when they asked those members they did participate. Like book or Google search”.

2. **Shaper:** He is a dangerous member in a team. He is a confrontational leader who tries to implement his thoughts and does not care about other colleagues. He gets irritated easily and he is bossy

   "Negative team experiences include that one of our team members (IHTM 1) was very dominating. As she was our team leader so we had to obey her”.

   "Negative team experiences include repeated interruptions and suggestions by the team leader (IHTM1). We sometimes got distracted. She was very dominating. At one time during history taking there was small fight with her. She had dictatorship in her”.

#### Conflicts:

Three types of conflicts were responsible for negative team dynamics; task, relationship and process related conflicts

"There were issues related to leadership. Another student (IHTM2), wanted to lead. We all should collectively have taken a good history but there were conflicts who should take the history”

"There were conflicts, because of repeated inputs from one of the members, this led to wastage of time and sometimes we could not reach the actual diagnosis in D/D.”

#### Suggestions to Improve Team Dynamics

#### Role of Leader

“To improve dynamics I should suggest that it should be leadership not dictatorship. There must be no bullying. Don’t make fun of or humiliate each other”

#### Mutual Respect

“To improve team dynamics team members must show a respectful attitude in teams, they must make the group themselves, and there must be no interruptions in these sessions.”

#### Pre-tasking

Students commented that some form of tasks must be given to them, before actually coming to work as teams. These may include individual or group assignments and preparation.

“Group and Individual Assignments must be attached to teamwork.”

“The only improvement required is to make sure that team members come prepared in each session for assessment.”
Disciplinary action: Students suggested that some form of strict disciplinary action must be required to deal with those students that were not interested.

"Team members who are not interested must be strictly dealt with."
"There must be strict action against those who do not perform well or who don’t participate."

Declarations

The author has declared that there are no conflicts of interest.

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