



Original Research Article

Effect of group dynamics on performance of first year medical students

Chandrika Teli^{1,*}, Nilesh Kate²¹Dept. of Anatomy, Esic Medical College, Gulbarga, Karnataka, India²Dept. of Physiology, Esic Medical College, Gulbarga, Karnataka, India

ARTICLE INFO

Article history:

Received 20-12-2019

Accepted 10-01-2019

Available online 14-03-2020

Keywords:

Cadaveric dissection

Dynamics

Group performance

Roles

Learning

ABSTRACT

Introduction: Cadaveric dissection forms integral part of learning anatomy. Few students are actively involved in dissection and remaining are passive observers. Present study was conducted to compare students' perception about cadaveric dissection practices following group dynamics [allotting a dissection-task related to each student] And effect of following group dynamics during cadaveric dissection on student's performance.

Materials and Methods: Perception and performance in theory and practical assessments were compared between control group [not following group dynamics] and study group [following group dynamics].

Results: Study group perceived following group dynamics has positive effect on learning and skill acquisition. Difference in performance was not significant in first theory assessment between study and control group, study group performed significantly better in both practical and second theory assessment.

Conclusion: Group dynamics used during dissections help students perform better by understanding complex task by peer learning and feedback and also helps them to develop leadership, time management and communication skills.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by/4.0/>)

1. Introduction

Cadaver dissection is integral part of anatomy curriculum for studying gross structure of human body. Anatomy knowledge is required for Medical practitioners, surgeons, anatomy teachers, and researchers to be a competent professional. For clinically oriented teaching prosections are used in some part.¹ Still collective data indicate that cadaver dissection in the undergraduate curriculum has continued in many institutions across the world.²⁻⁴

Depending upon availability of cadavers, 8 to 20 students are dissecting on one cadaver. practically maximum 3 students can dissect on each side of cadaver. There are no explicit guidelines about what other students can do or utilize the time during dissection hours. Each teacher tries to engage or have different idea about what other students should do. We conducted this study to know if dissection related task roles allotted to students help utilise

the time effectively [when not dissecting], their perception about working as a team, effect of team work on their performance.

2. Objectives

1. To compare students' perception of cadaveric dissection practices between following group dynamics and not following group dynamics.
2. To know if following group dynamics during cadaveric dissection practices helps students to understand and perform better.

3. Materials and Methods

Institutional ethical committee clearance was obtained. written informed consent taken from participants.

3.1. Inclusion criteria

Students willing to participate in study

* Corresponding author.

E-mail address: drchandrikaesic@gmail.com (C. Teli).

3.2. Exclusion criteria

Absentee / students not willing to participate in study

3.3. Sampling technique

80 willing participants of 100 students divided according to roll numbers into 4 tables for dissection

3.4. Data collection

Two tables were following traditional method during dissection time wherein 4 -6 students were dissecting and others observing. Remaining students were not allotted any particular role and were self- studying.

For other two tables out of 10 students each was given a role /responsibility to read and explain with clear instructions about what is expected from them for initial 2 weeks.

Once the students were aware of roles distribution, it was decided by team leader from table.

On each table of 10 students doing any regional dissection

1 leader was appointed to coordinate / moderate discussion – and maintain daily log

2 dissectors - were allotted to do the dissection

1 student read the surface projections/landmarks and dictated steps from dissection guide

2 students would read and explain osteology related to the dissection

2 students read and explained muscles in the region

2 read and explained vessels /nerves related in the region

Students were doing all roles in rotation so in week schedule each will play each role once sequence of topic and time needed to complete was flexible according to students need. Initial 10 min was for distributing roles and hand over of previous session roles. Each one will do the allotted study for 30-40 min followed by discussion and demonstration of dissected parts simultaneously for 30 min. A faculty was moderating activities and discussions as well addressing any doubts.

3.5. Statistical methods

The perception of students was obtained by using a questionnaire on Likert scale from strongly disagree to strongly agree.

3.6. Descriptive statistics

Parametric test -two tailed unpaired 't' test was applied to compare the knowledge scores of students. Non parametric test- rank based, Mann – Whitney u test was applied.

4. Results

Graph 1 showing - Perceptions of students [in %] about dissection practices not following [Group I]and following dynamics [Group II]

Graph 2 shows marks scored by individual student in theory I &II of control group

Graph 3 shows marks scored by individual student in practical I &II of control group

Graph 4 shows marks scored by individual student in theory I &II of study group

Graph 5 shows marks scored by individual student in practical I &II of study group

Graph 6 shows comparison of average marks scored by control [group 1] and study [group 2] in theory and practical

5. Discussion

Students subjected to group dynamics agreed strongly [70%] that learning objectives are clear, Work is properly distributed on dissection table [60%] and they can dissect in rotations equally [60%] as compared to control group [20-30%] students.

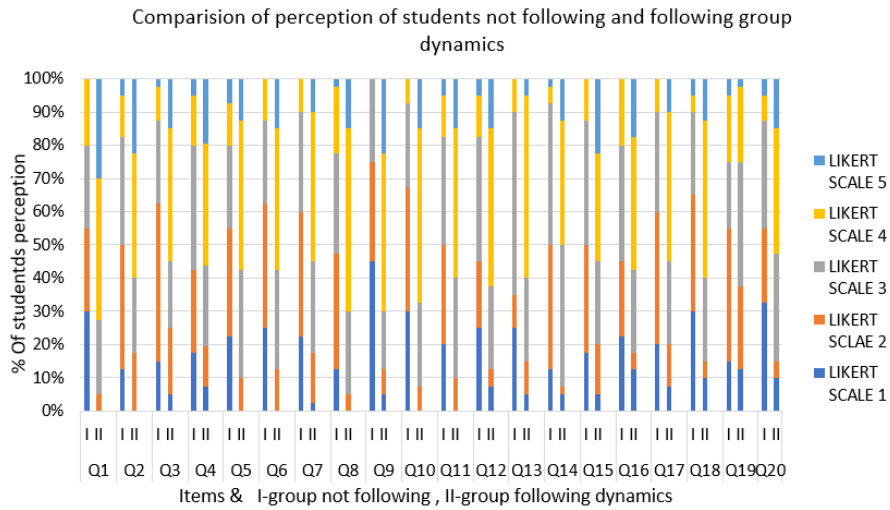
Students [60%] in study group strongly appreciated the proper time-management, responsibility [task]accountability and regular feedback as compared to only 20% strongly agreed in control group. [Graph 1]

Control group average score in first formative assessment was 41% & 54% in theory and practical respectively while the score in second formative assessment was 36% and 44% in theory and practical respectively. The performance of control group showed fall in theory and practical as well by 5 and 10 % respectively. [Graph 2, Graph 4]

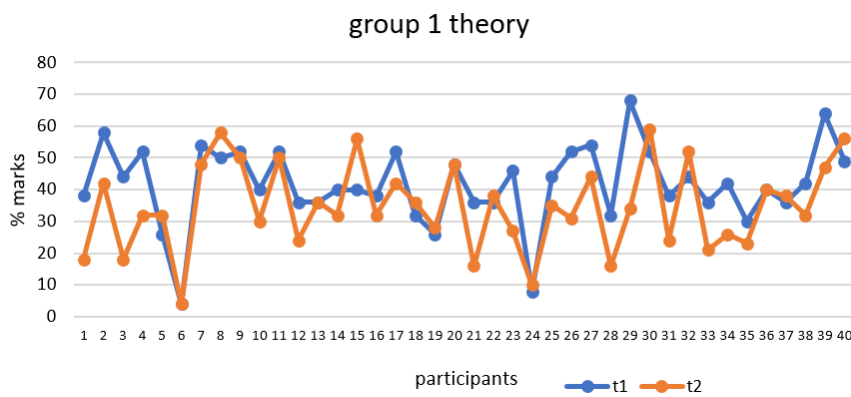
Study group average score in first formative assessment was 46% & 60% in theory and practical respectively while the score in second formative assessment was 44 % and 64 % in theory and practical respectively. The performance of control group showed improvement in practical by 4% but remained consistent in theory. [Graph 3, Graph 4]

Compared to control group, study group performed better in all formative assessments and could perform consistently even with more syllabus for second formative assessment. The difference in performance is statistically significant in first practical and second formative assessments. [Table 1]

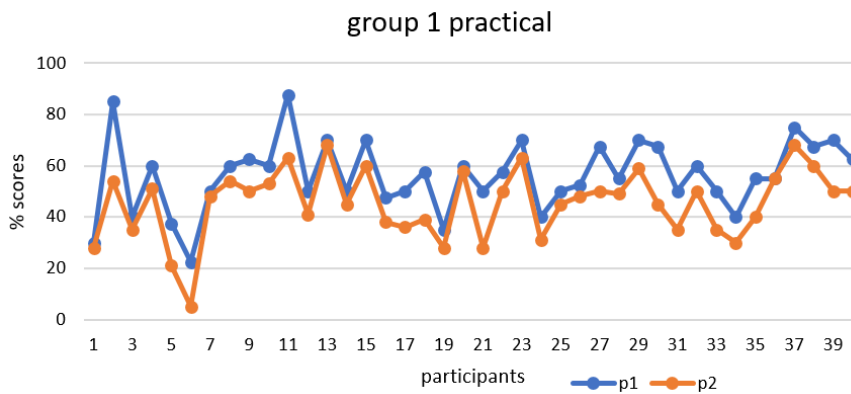
Students of study group performed better in first formative assessment of theory was not statistically significant as compared to control group. Performance of study group was significantly better in practical suggested that group dynamics in dissection lab help to improve the skills related to practical. Study group performed significantly better in second formative assessment both in theory and practical. Due to group dynamics students are actively involved in learning all aspects of anatomy [surface landmarks, osteology, myology, vessels and nerves



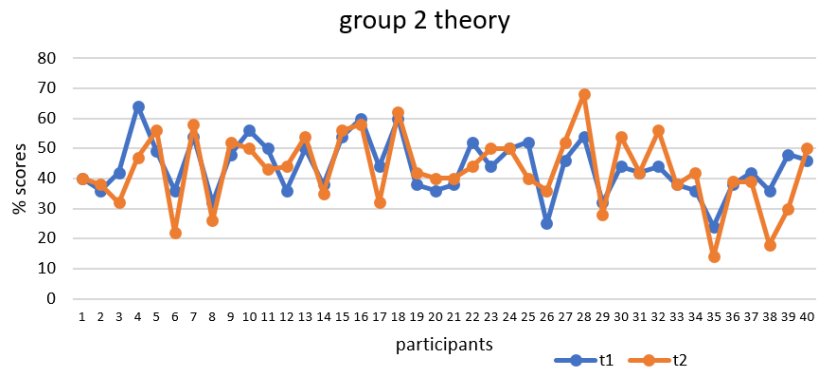
Graph 1: Perceptions of students



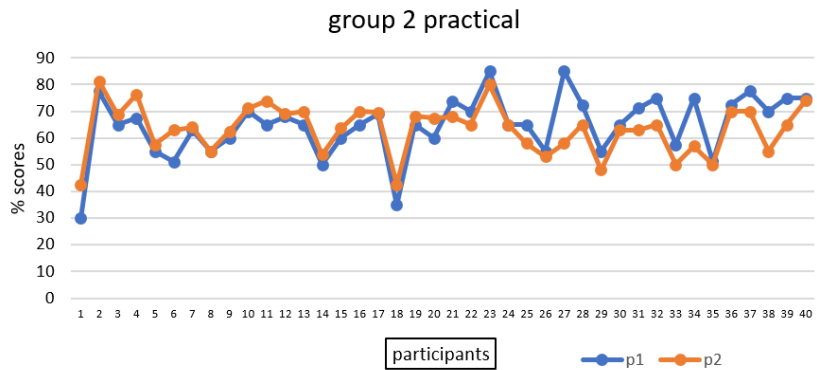
Graph 2: Theory score of control group



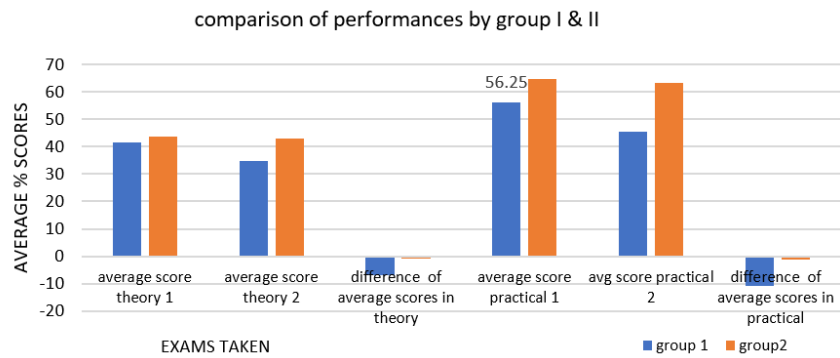
Graph 3: Practical scores of control group



Graph 4: Theory scores of study group



Graph 5: Practical scores of study group



Graph 6: Comparison of average marks between study and control group

Table 1: Showing comparison of control and study group performance and statistical significance

Particular	Average score theory 1	Average score theory 2	Diff of average scores in theory	Average score practical 1	Average score practical 2	Diff of average score in practical
Group 1-control	40.9	35.8	-5.1	54.25	43.75	-10.5
Group2-study	46.15	44.35	-1.8	59.8	64.49	4.69
Std Dev	14.27	14.71	20.77	27.68	18.19	26.64
Gp1-control						
Std Dev Gp2 -study	19.70	10.45	25.19	32.59	10.91	31.19
t- value	-0.88092	-2.89734		-2.96954	-6.94337	
p value	.38107 not significant	.004883 Significant at p < .05.		.003961 significant at p < .05.	< .00001 significant at p < .05.	
Mann -Whitney U		512		460	203	
Z	-0.61103	-2.76166		3.12805	-5.73501	
p value	.54186 not significant	.00578. significant at p < .05.		.00174 significant at p < .05.	< .00001 significant at p < .05.	

and dissection correlating relations of structures]. Improved performance in theory and practical of second formative assessment suggests distributing task, feedback and peer leaning helps in long term learning, recall and performance.

Good group dynamics help learning, retention and reinforce skills relevant to group and individual⁵⁻⁷ Informal feedback from students suggested applying group norms and following dynamics regularly helped them to make complex tasks easy, manage time. They could discuss, explain give and receive feedback on performance of /from peers. They felt responsible & accountable for allotted task. Non-English-speaking students reported it was helpful to develop communication skills which helped in improving performance in viva-voce. Efforts were made to meet learning objectives as daily progress and expected target was monitored by table teacher.

6. Limitations

We cannot attribute the better performance of study group only to group study, student self-study and involvement cannot be ruled out. We could not study performance of control group following group dynamics because of time constrains and students were to appear for university examinations. We commented about improvement in time management, leadership qualities and communication skills which are self-reported by students or observed by table in-charge. We could not give exact numerical for improvement of soft skills.

7. Conclusions

Positive group dynamics help learning, retention and reinforce skills relevant to group and individual. Sensitising students and using group dynamics in daily practices will help students to step towards the IMG standard of MCI⁸

by being able to communicate, lead, learn from peers, handle the groups and to perform better. We suggest to make students aware of group dynamics and use in daily practices as dissection hall, labs, clinical settings, even in administration to be an effective performing group.

8. Source of Funding

None.

9. Conflicts of Interest

None.

References

1. Rainsbury D, Barbour A, Mahadevan V. College launches National Anatomy Project. *Ann R Coll Surg Engl*. 2007;89:19.
2. Gangata H, Ntaba P, Akol P, 10 Izunya AM, Oaikhena GA, Nwaopara AO: Attitudes to cadaver dissection in a Nigerian medical school. *Asian J Med Sci*. 2010;3:89–94.
3. Bekele A, Reissig D, Löffler S, Hinz A. Experiences with dissection courses in human anatomy: A comparison between Germany and Ethiopia. *Asian J Med Sci*. 2011;193(2):163–167.
4. Ongeti K. Pedagogical value of dissection anatomy in Kenya. *Singapore Med J*. 2012;53:712–714.
5. Eisma R, Lamb C, Soames RW. From formalin to thiel embalming: What changes? One anatomy department's experiences. *Clin Anat*. 2013;26(5):564–571. doi:10.1002/ca.22222.
6. Astin A. What matters in college? Four critical years revisited. San Francisco: Jossey-Bass ; 1993,.
7. National Survey of Student Engagement Report ; 2006,. Available from: http://nsse.iub.edu/NSSE_2006_Annual_Report/docs/NSSE_2006_Annual_Report.pdf.
8. Reforms in undergraduate and post graduate medical education. Vision 2015. Medical Council of India ; 2015,. Available from: https://www.google.co.in/url?sa=t&source=web&rct=j&url=https://old.mciindia.org/tools/announcement/MCI_booklet.pdf&ved=2ahUKEwil_sHWiMHaAhUIPY8KHSyEikQFjAAegQICBAB&usg=AOvVaw0E9I73VTVMFrlBg_m7-omC.

Author biography

Chandrika Teli Assistant Professor

Nilesh Kate Professor

Cite this article: Teli C, Kate N. Effect of group dynamics on performance of first year medical students. *Indian J Clin Anat Physiol* 2020;7(1):36-41.