

**Research Article****IMPACT OF PEER ASSISTED 'GALS' LEARNING ON PRECISION IN CLINICAL DIAGNOSIS OF VARIOUS SPINAL DISORDERS****Nakanekar Amit<sup>1\*</sup>, Suryawanshi Sharmili<sup>2</sup>, Telang Shweta<sup>3</sup>, Chaudhari Hitesh<sup>4</sup>, Rathod Suraj<sup>5</sup>, Gulhane Jayant<sup>6</sup>**<sup>1</sup>Assistant Professor, <sup>5</sup>PG scholar, <sup>6</sup>Associate Professor, Unit 3, Dept of Kayachikitsa, Government Ayurved College Nagpur, India.<sup>2</sup>Associate Professor, <sup>3</sup>Assistant Professor, Dept. of AYUSH, Maharashtra University of Health Sciences, Nashik.<sup>4</sup>Ayurved Physician, Specialized in Neuro Spine Disorders, Nashik, India.

Received on: 28/08/2015

Revised on: 14/09/2015

Accepted on: 20/09/2015

**ABSTRACT**

GALS screening examination is a simple, easily reproducible technique which requires minimal clinical instrument. This serves as effective tool in clinical diagnosis and assessment of various disorders. Spine Disorders forms integral part of Outdoor Patient Department (OPD) and Indoor patient department of Ayurvedic hospitals. They also forms integral part of various PG dissertations. Clinical diagnosis of spine disorder is very important. In spite of such enormous burden in OPD & IPD many times *Ayurvedic* students lack in diagnostic precision of various spinal disorders. Assistance of peer or teacher is very important in learning clinical skill. Aim of present study was to see impact of peer assisted GALS learning on precision in clinical diagnosis and assessment in interns and first year PG students.

Total 15 students who were working in unit 3 of Kayachikitsa department were selected for training. 1 months peer assisted GALS skill training was given to them. They were assessed for precision in clinical diagnosis and confidence to diagnose with the help of confidence questionnaire and Final Objective structured clinical examination (OSCE) before and after training along with that open ended response also taken from them about the examination. Data was collected and analyzed based on observations and inference drawn. Peer assisted GALS learning improves clinical performance of students. 'GALS' is a effective clinical tool in clinical diagnosis and assessment of various spinal disorders.

**KEYWORDS:** GALS, Peer Assisted Learning, Diagnostic Precision.**INTRODUCTION**

Spine Disorders forms integral part of Outdoor Patient Department (OPD) and Indoor patient department (IPD) of *Ayurvedic* hospitals. They also forms integral part of various PG dissertations. Due to limited investigation facility and non affordability of patients many times we need to diagnose patient clinically and In spite of good investigation facility clinical correlation of reports forms integral basis of diagnosis. In spite of such enormous burden in OPD & IPD many times *Ayurvedic* students lack in diagnostic precision and assessment of progression and/or regression of various spinal disorders.

Good history taking combined with good clinical examination can not only yields good recovery and precision in diagnosis but also improves patients faith on doctor. A sincere and meticulous physical examination combined with in depth as well as sound knowledge of medicine would help physician to determine most probable cause/causes of patient's elements.<sup>[1]</sup>

Introduction of GALS [Gait (G), Arm (A), Legs (L), Spine (S)] clinical examination system has allowed a validated, systemic screening process taking less than 3 minutes for use in clinical assessment. This along with good history taking can be a effective tool in diagnosis of various spinal disorders related to musculoskeletal system.<sup>[2]</sup> Clinical skills have been augmented by the use of peer assisted learning (PAL) in several professions including medicine.<sup>[3]</sup> This PAL allows students to help their colleagues in teaching and learning support.<sup>[4]</sup> PAL improves self-esteem, commitment to work and promotes mutual concern among participants.<sup>[5]</sup> Recognized advantages PAL includes greater familiarity with course and readiness to integrate new learning experiences in context. In addition teachers are deemed to be more approachable by their students.<sup>[6]</sup>

Considering all these facts Idea was to combine PAL of GALS to improve clinical diagnosis and clinical assessment of various spinal disorders of

musculoskeletal system. Improved clinical skills can not only facilitate good clinical diagnosis and assessment but also precision in writing good Post graduate dissertations. A good clinical assessment is most important factor in assessment of effects of various medications, *Pathyapathya*, (~Does and Don'ts) *Panchkarma* etc. This uniformity of clinical assessment in all dissertations will also help in comparative analyses of two different dissertations.

### Aim

Aim of present study was to see impact of peer assisted GALS learning on precision in clinical diagnosis and assessment in interns and first year PG students.

### Methodology

There is allotment of clinical posting in Kayachikitsa department as a part of academic curriculum various intern students and first year post graduate students. Total 15 students who were posted for their clinical posting in Unit 3 of Kayachikitsa were

selected for the study. Initially they were observed for their skills in precision in clinical diagnosis and their confidence in such skill was assessed with help of confidence questionnaire on the basis of OSCE-AID given by OSCE-AID Revision workshop.<sup>[7]</sup> Then they were trained by PAL for 1hour daily during week days excluding Sunday holidays for 30 days. Total duration of training was not less than 23 hours for each student. After completion of 1 month they were again assessed for their skills and confidence questionnaire by visual analogue scale (1-100mm). All the trainers were given an opportunity to provide Open ended Feedback regarding various aspects of training session.

The data collected as nonparametric data analysed statistically with the help of 'In stat 5' software. Wilcoxon rank sign test was applied before and after. 50 out of 100 was considered as passing limit. chi square test was applied on 2\*2 contingency table pass/fail and before after.

**Table 1: Statistical analysis of OSCE AID score after GALS training**

S.No.	Name of student	Before training score	After training score	Open ended Responses By student
1	BN(f)	54	98	Good
2	GM(m)	48	85	Time consuming
3	KS(f)	57	80	Good
4	SK(f)	49	75	Good
5	VB(f)	35	96	Best
6	PR(f)	51	97	Good
7	PS(f)	52	83	Good
8	MF(f)	52	94	Good
9	RB(f)	45	90	Time consuming
10	RG(f)	48	95	Best
11	KC(f)	35	86	Good
12	PB(m)	51	95	Good
13	AK(m)	25	48	Boaring
14	PG(f)	40	92	Time Consuming
15	TK(f)	58	85	Good

**Table 2: Assessment results after GALS training**

Result of Examination	Before Training	After Training
Fail	8	1
Pass	7	14
Total	15	15

The two-tailed P value is < 0.0001, considered extremely significant

### Calculation details

Sum of all signed ranks (W) = -120.00

Sum of positive ranks (T+) = 0.000

Sum of negative ranks (T-) = -120.00

Number of pairs = 15.

Chi-square statistic (with Yates correction) = 5.714

Degrees of freedom = 1

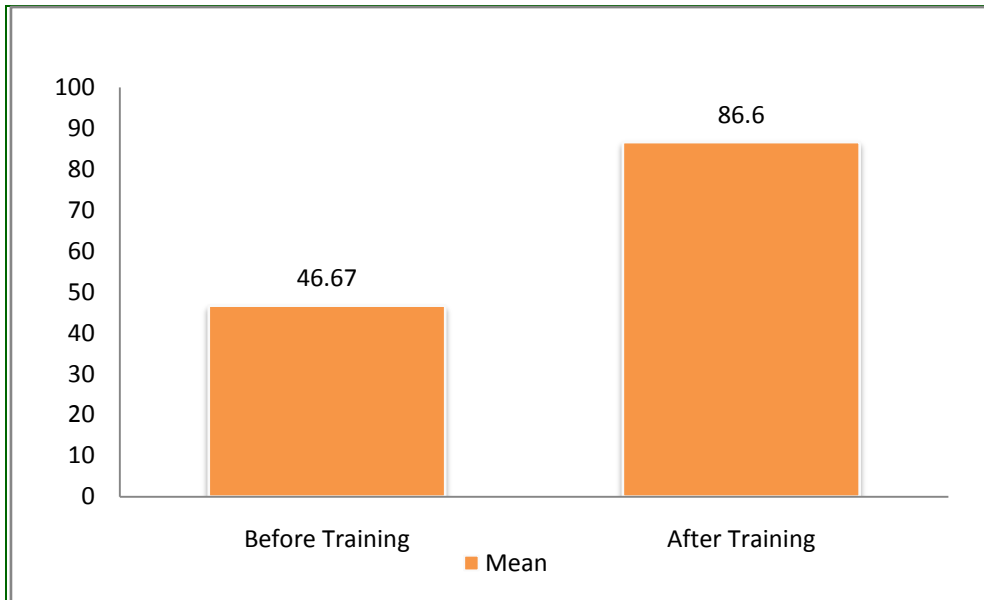
The row/column association is statistically significant

### Chi square test

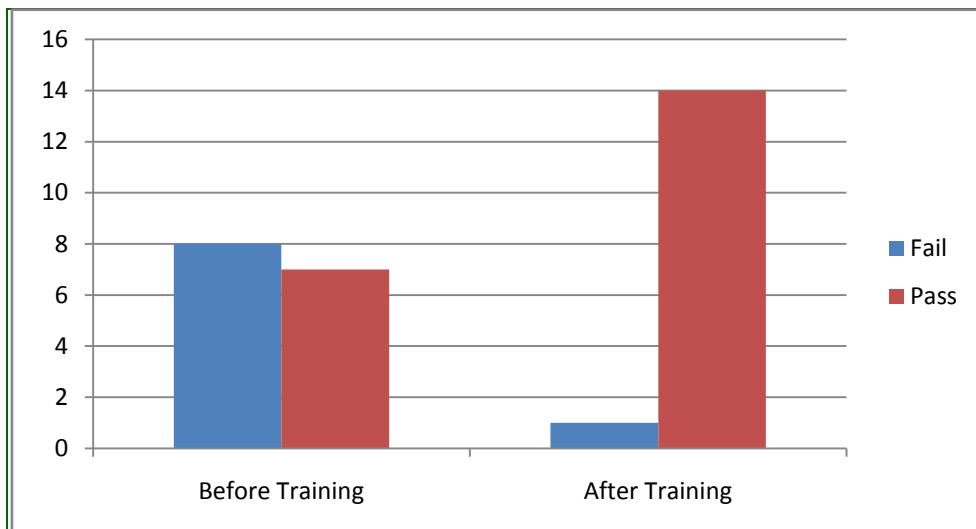
The two-sided P value is 0.0168, considered significant.

Calculation details:

**Fig 1 Showing Before and after training average scores by students**



**Fig 2 Showing passed and failed students before and after training**



**DISCUSSION**

Initially 8 out of 15 students were unable to diagnose the spinal disorders while examining the patients, after the training there was significant improvement in the Judgment and Diagnosis skills of Students regarding Spinal Disorders which reduced the failure rate to only one student (fig 2). This showed that proper GALS learning by PAL technique is effective in clinical diagnosis of various spinal disorders. Improvement in the scores (fig 1) may have resulted from more effective learning, improved confidence and frequency of teaching GALS using PAL. Repetition of teaching involved in PAL may account for difference in OSCE examination. OSCE score improvement shows that there is enhancement in the necessary required skills of diagnosing spinal disorders related to musculoskeletal System. Along with increase in score Open ended feedback provided by students was also encouraging. These attributes are highly relevant for personal development, Student Centered Learning and

are required by general medical council by tomorrow’s doctors.<sup>8</sup>

In this study use of PAL to teach GALS with the use of newer assessment techniques of Medical Education Technology shows successful way to impart knowledge to an Adult learner. This ensures that the learning is Student centered, provides adequate learning triggers in a Safe learning environment.

However there are number of limitations of this study. First is only small number of students were given this training. Consistency in large scale studies needs to be determined. Larger responses rate from learners completing training would have thrown more light on outcomes of GALS learning. It is also possible that tuition by non-specialist may not be as effective as delivered by faculty. There is addition of specialization for 4<sup>th</sup> paper in PG Kayachikitsa in Maharashtra University of Health Sciences (MUHS) and this is one of specialty. There is a positive correlation between

undergraduate/intern/PG first year experiences with future carrier choice<sup>9</sup>. Peer assisted GALS learning can there for improve both quality and quantity of recruits to the specialty. This is also a kind of first study done with *Ayurvedic* students rather than on MBBS students.

#### ACKNOWLEDGEMENTS

Authors are thankful to all the students who participated and shown keen interest in participating this study.

#### REFERENCES

1. Kundu A.K. perspectives. Bedside clinics in medicine; Academic publishers 5<sup>th</sup> edition 2006 Part 1 page-2.
2. Docherty M, Dacre J, Dieppe P, Snaith M. The GALS locomotor screen. *Ann Rheum Dis* 1992;51:1165-9.
3. Field M, Burke JM, McAllister D, Lloyd DM. Peer assisted learning: A novel approach to clinical skills learning for medical students. *Med Educ* 2007;41:411-8.
4. Whitman NA, Peer teaching: to teach is to learn twice. In: J-B ASHE higher education report series. Sanfrancisco: Jossey-Bass, 1998.
5. Topping KJ, Ehly S. Peer assisted learning. Hillsdale NJ: Lawrence Erlbaum, 1998.
6. Sheldon A. Friendly models. *Sci Med Man* 1973;1:49-54.
7. OSCE-Aid Revision Workshop: GALS. [www.osce-aid.co.uk](http://www.osce-aid.co.uk). 14 Jan 2015
8. General medical council. Tomorrow's doctors: recommendations on undergraduate medical education. London; Education committee GMC 1993.
9. Kolasinki SL, Bass AR, Kane-wanger GF et al. Subspeciality choice: why did you become a rheumatologist? *Arthritis Rheum* 2007;57:1546-51.

#### Cite this article as:

Nakanekar Amit, Suryawanshi Sharmili, Telang Shweta, Chaudhari Hitesh, Rathod Suraj, Gulhane Jayant. Impact of Peer Assisted 'Gals' Learning on Precision in Clinical Diagnosis of Various Spinal Disorders. *International Journal of Ayurveda and Pharma Research*. 2015;3(9):71-74.

**Source of support: Nil, Conflict of interest: None Declared**

#### \*Address for correspondence

**Dr. Nakanekar Amit**

Assistant Professor

Unit 3, Dept of Kayachikitsa

Government Ayurved College

Nagpur, Maharashtra, India.

Mobile: 09850233016

Email: [amitnakanekar@gmail.com](mailto:amitnakanekar@gmail.com)

