

Contribution of Educational Methods in Effective Retention of Clinical Skills: A Three Years Prospective Study

Adnan A.A.

Affiliation: Consultant Pediatrics, Dean Of faculty of medicine, Source Al-Taif University, KSA, Saudi Arabia

Abstract

In attempting to implement a new effective outcome based curriculum, our medical school in Al Taif University, began defining specific learning skills outcomes for our medical graduates, and subsequently evaluating the degree of retention of these competences.

In this study, by using student self assessment questionnaires along the three years of clinical phase prospectively, we can clearly defined the skills with no or poor retention in either early clinical phase that depends mainly on skill lab education, and late clinical phase that depends mainly on contact with real patient and hospital education. Seventy eight skills preset by faculty experts were investigated, and the results showed that;

Students reported high level of perceiving communication skills and information and research skill in both early and late clinical phase. Most of the skills that failed to be retained in early clinical phase and also in late clinical phase are of practical skills category. We also specified the skills of poor retention in both early and late clinical phase. The results will allow us to make curricular and methodological changes in order to implement a new outcome-based curriculum and to optimize the student clinical experience to ease students' transition from undergraduate clinical phase to clerkship phase.

KEYWORDS: clinical competence, skills retention, educational methods

Aim:

To report the views of our graduated medical students regarding the extent to which they have retained the essential skills previously defined by the faculty to have competent graduates

Method:

A three years (between 2010– 2012), prospective observational study, that has been reviewed by our Institutional Review Board and met the criteria of Exempt status.

One patch of 66 medical students, representing all the students of 4th year was subjected to the study.

78 skills under 4 domains, preset by groups of faculty experts as essential skills in I) practical (18 skills) II) communications (4 skills) III) information and research (2 skills) and IV) clinical (54 skills).

The same patch of students was used in the study to have self (internal) control along the 3 years duration of the study.

The educational methods used in early-clinical phase (4th and 5th year) – based mainly on skill lab, with models and simulations (like Harvey model.....etc). The skills were conducted under supervision of subject matter experts, guided by standardized check lists. OSPE and OSCE stations were used for continuous and end of semester's assessment.

In late-clinical phase (year 6)- it is based mainly on contact with real patients under supervision of senior house officer and consultants. OSCE stations and portfolios were used for assessment at the end of semesters.

A questionnaire (appendix I) was designed and administered to all 66 students at the end of 4th year, they were asked to indicate on a Likert scale (Wuensch, Karl L. 2005), their perceived level of retention of each skill in the preset 4 domains whether the skill (not done, done not well or done well). The same questionnaire was administered by the end of 5th year and 6th year to assess the evolution of students' skills retention in early-clinical phase (skill lab based education) and late-clinical phase (hospital based education).

In attempting to increase the validity of questionnaire, review sessions conducted by faculty experts to all students before final OSPE and OSCE exams, with delivering check lists for all skills at the end of these sessions

Data Analysis:

Considering the 4th and 5th year as early -clinical phase VS. 6th year as late-clinical phase, with reporting each skill as either done not well or done well, this 2x2 comparison (appendix II), Odds ratio and cohort were calculated with 95% confidence interval These can reflect for each skill the degree of retention of well done skill In either early-clinical or late-clinical phases. Comparing of the 3 years groups by ANOVA indicate whether there is significant difference between the educational phases on retaining skills (a p-value less than 0.05 was considered significance).

SPSS-V.16 program was used in statistical analysis.

Results:

Sixty six students participated and completed this study over three consecutive academic years. Seventy eight skills were subjected to investigation, under four domains. Overall, 22 of skills showed good retention in early clinical phase, and 8 skills showed non effective retention, while the remaining 48 skills showed poor retention and need to improve. In late clinical phase, 20 skills showed good retention and 7 skills with non effective retention, while the remaining 51 skills showed poor retention and need to improve, (Histogram (1)).

In early clinical phase,(Skill lab. Based education); out of 18 practical skills (Table 1) showed good retention effect, 8 with poor retention and 5 non retention effect. While

in the late clinical phase (Real patient and hospital based education), 4 practical skills showed good retention, 11 with poor retention and 3 with non retention effect.

In communication skills domain (Table 2) out of 4 skills, 3 showed good retention, in both early and late clinical phase, while only one remains with poor retention and need to improve.

Regarding the information and research skills (Table 3) the two skills in this domain showed good retention in both early and late clinical phases.

For the last domain of skills, the clinical skills (Table 4) out of the 54 skills, in early clinical phase, 12 skills showed good retention, and 3 with non retention effect, while the remaining 39 skills showed poor retention and need to improve. Investigation of these clinical skills in late clinical phase revealed that; 11 skills showed good retention, 4 with non retention effect and the remaining 39 skills showed poor retention and need to improve.

The value of Odds ratio > 1 indicates well done skill, the value of cohort (late clinical) < 1 indicates that it is more significant in late clinical phase, while the level of significance in ANOVA > 0.05 indicates significance difference between the investigated groups.

Discussion:

There is great evidence that traditional educational methods produce doctors lacking in fundamental skills (Jebbin NJ.2012), some medical schools are failing to train doctors with basic competence in core technical and procedural skills. Forward-thinking leadership should be alarmed, and it is clear that creative curricular changes are required to recapitulate the high standards (Jebbin NJ.2012). Approaches to skill-based medical education that are theory based include the use of simulators and virtual reality, video modeling, skills training workshops, peer-assisted learning and instruction by non-physician skills facilitators (Hansen M. et al. 2011) & (Soriano RP. et al. 2010).

Clinical skills and theoretical knowledge are two equally important parts of medical education (Remmen R. et al, 2001). Early introduction of clinical skills makes students more comfortable in performing patient assessment during their clerkship years (Diemers AD. Et al,2008)& (Kamalski DM. et al. 2007), it is important for undergraduate medical students to acquire interviewing/ communication techniques and physical examination skills early in medical education, in order to adopt correct behaviors in approaching patients' problems. However, early introduction of clinical skills has several challenges which can affect student learning (Lam TP et al.,2002)

Standardizing and optimizing the student clinical experience has long been a goal of educators (American college of Emergency Physicians (ACEP), (2009). Our study assessed students' self reported abilities in several of the core competences, namely practical skills communication skills, information and research skills and clinical skills preset by faculty experts as essential core competent skills.

In our study the clinical phase has been divided based on method of introducing the skills into, early clinical phase, 4th and 5th year (skill lab based education), and 6th

year (real patients and hospital based education). Students reported high level of perceiving communication skills and information and research skill in both early and late clinical phase. Most of the skills that failed to be retained in early clinical phase and also in late clinical phase are of practical skills category, like interpret basic urine analysis and blood analysis, extraction of foreign body from throat, nose and ear. Some clinical skills like physical examination of head and neck has been improved in late clinical phase.

The vast majority of practical and clinical skills were poorly conducted in early and late clinical phase and need to be improved either by emphasize more on skill lab., and simulated patient in early clinical phase, and making clinical workshops using real patients to increase the frequency of exposure to the clinical skills in late clinical phase.

Based on self assessment study, we can clearly defined the skills with no or poor retention in either early clinical phase ,that depends mainly on skill lab education, and late clinical phase that depends mainly on real patient and hospital education. By using this self assessment technique, enabled us to figure out the defective skills and whether to emphasize more in using either skill lab facilities or using simulated patients and clinical cases. These findings may inform the structure and content of new curriculum to optimize the student clinical experience and to ease students' transition from undergraduate clinical phase to clerkship phase.

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Essentials:

- We specified seventy eight specific learning skills outcomes for our clinical phase medical students.
- Assessment of the degree of retention of particular skill could be judged using OSCE & OSPE exams, but it could be difficult to generalize the results to reflect the retention of all skills
- In this study, we clearly defined the degree of retention of all skills outcomes
- We correlated the findings with the educational methods used whether skill lab or real patient.
- The results allow us to make curricular and methodological changes in order to implement a new outcome-based curriculum

**Histogram (1): INCIDENCE AND TYPE OF RETENTION OF SKILLS IN THE FOUR SKILL DOMAINS
(Practical & communication & information and clinical) SKILLS**

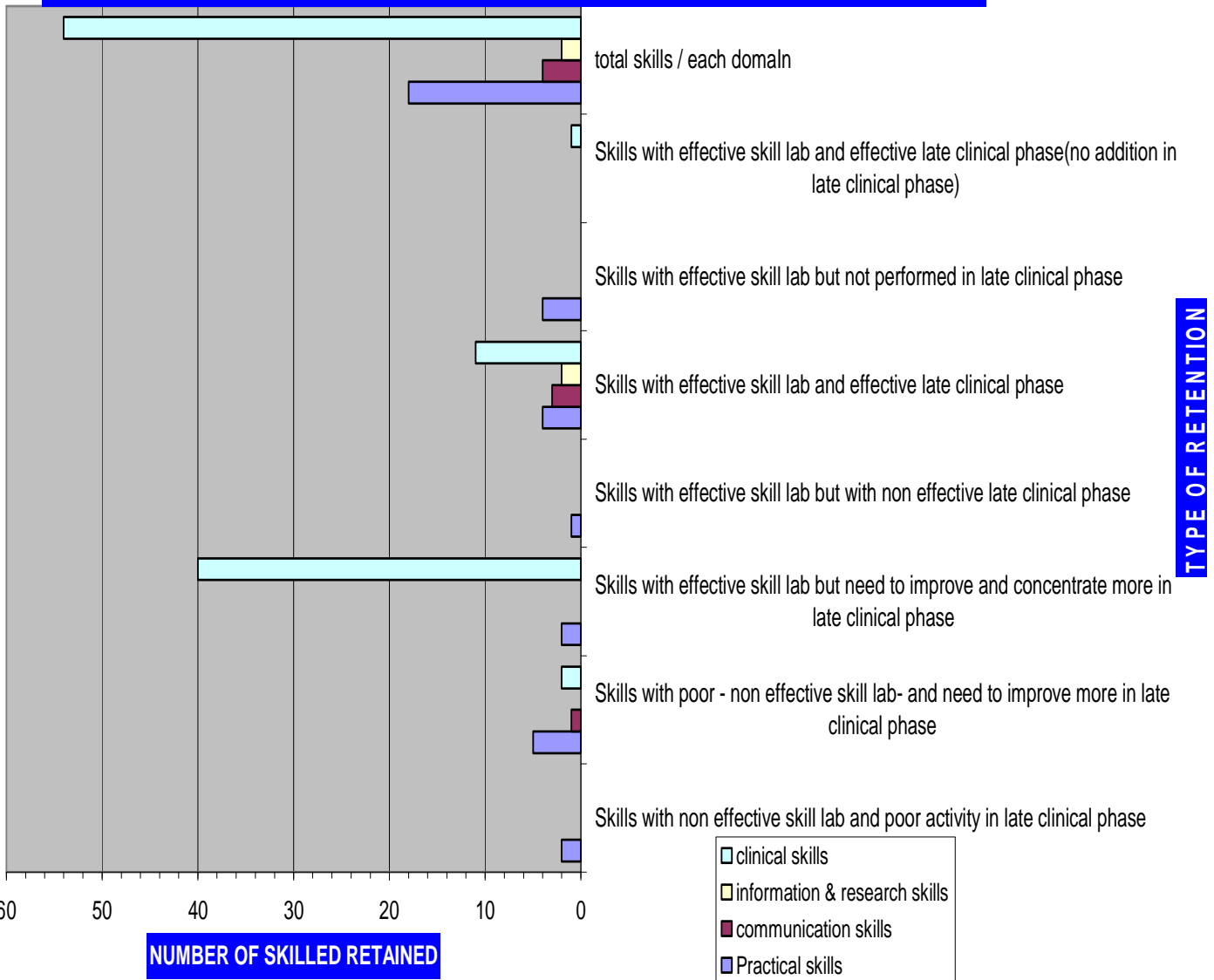


Table (1) Practical Skills Odds & cohort and ANOVA analysis

Variable	Odds Ratio		cohots (group= late clinical)		ANOVA (between groups)						
	Value	95% ConfidenceInterval		Value	95% ConfidenceInterval		Sumof Squares	df	Mean Square	F	Sig.
		Lower	Upper		Lower	Upper					
Skills with non effective skill lab and poor activity in late clinical phase											
Interpret basic urine analysis	1.324	0.566	3.097	0.874	0.592	1.292	8.253	2	4.126	7.651	0.001
Interpret basic blood analysis	1.067	0.527	2.162	0.968	0.682	1.374	14.707	2	7.354	15.025	0
Skills with poor - non effective skill lab- and needto improve more in late clinical phase											
Measure of temperature	1.064	0.531	2.118	0.97	0.686	1.37	2.616	2	1.308	2.013	0.136
Perform pregnancy test	1	0.33	3.028	1	0.575	1.74	2.212	2	1.106	2.745	0.067
Male and female urethral catheterization	1.874	0.894	3.928	0.743	0.532	1.038	2.818	2	1.409	2.786	0.064
Administer intravenous injection	1.145	0.413	3.175	0.936	0.577	1.52	0.374	2	0.187	0.351	0.704
Administer subcutaneous injection	6.5	0.76	55.572	0.56	0.393	0.797	1.586	2	0.793	2.471	0.087

Skills with effective skill lab but need to improve and concentrate more in late clinical phase

Wound care and dressing	3.1	0.933	10.298	0.641	0.417	0.919	5.586	2	2.793	6.816	0.001
Simple surgical suture	3.877	1.686	8.916	0.563	0.412	0.768	6.303	2	3.152	7.275	0.001

Skills with effective skill lab but with non effective late clinical phase

Administer intramuscular injection	0.751	0.262	2.153	1.163	0.649	2.084	1.768	2	0.884	1.803	0.168
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Skills with effective skill lab and effective late clinical phase

Measure of blood pressure	0.56	0.276	1.138	1.324	0.547	1.85	1.98	2	0.99	3.765	0.025
Measure of pulse	0.858	0.399	1.848	1.078	0.744	1.561	2.131	2	1.066	3.354	0.037
Interpret simple bone X-Ray	0.925	0.427	2.005	1.04	0.702	1.542	6.798	2	3.399	7.212	0.001
Interpret simple thorax X-Ray	0.55	0.242	1.25	1.381	0.856	2.23	11.828	2	5.914	13.648	0

Skills with effective skill lab but not performed in late clinical phase

Extract foreign bodies from throat	--			0.496	0.418	0.59	0.98	2	0.49	4.047	0.019
Extract foreign bodies from nose	--			0.496	0.418	0.59	1.343	2	0.672	5.822	0.004
Extract foreign bodies from ear	--			0.496	0.418	0.59	0.212	2	0.106	1.139	0.322
Administer intradermic injection	--			0.496	0.418	0.59	0.212	2	0.106	0.769	0.465

Value of Odds ratio	if less than 1 = this indicates that this skill is well done
Cohort= late clinical	if more than 1 = this indicates that this skill is more in clinical than pre-clinical
sign of ANOVA	if less than 0.05 = this indicate significance difference of this variable in the three groups

Table (2) Communication Skills Odds & cohort and ANOVA analysis

Variable	Odds Ratio		cohots (group= late clinical)			ANOVA (between groups)					
	Value	95% Confidence Interval		Value	95% Confidence Interval		Sum of Squares	df	Mean Square	F	Sig.
		Lower	Upper		Lower	Upper					
Skills with poor - non effective skill lab- and need to improve more in late clinical phase											
Write Medical report	1.611	0.612	4.243	0.804	0.535	1.206	2.212	2	1.106	2.461	0.088
Skills with effective skill lab and effective late clinical phase											
Communicate with patient	0.862	0.406	1.834	1.076	0.746	1.55	13.859	2	6.929	20.591	0
Make oral presentation	0.776	0.385	1.561	1.138	0.794	1.63	3.909	2	1.955	5.297	0.006
Communicate bad news	0.176	0.073	0.426	2.824	1.498	5.324	22.616	2	11.308	21.286	0

Value of Odds ratio	if less than 1 = this indicates that this skill is well done
Cohort = late clinical	if more than 1 = this indicates that this skill is more in clinical than pre-clinical
sign of ANOVA	if less than 0.05 = this indicate significance difference of this variable in the three groups

Table (3) Information and Research Skills Odds & cohort and ANOVA analysis

Variable	Odds Ratio		cohots (group= late clinical)			ANOVA (between groups)					
	Value	95% Confidence Interval		Value	95% Confidence Interval		Sum of Squares	df	Mean Square	F	Sig.
		Lower	Upper		Lower	Upper					
Skills with effective skill lab and effective late clinical phase											
The value and the use of information	0.558	0.232	1.342	1.374	0.818	2.307	8.273	2	4.136	9.133	0
Design and use of research database	0.789	0.304	2.053	1.131	0.674	1.898	5.828	2	2.914	6.7	0.002

Value of Odds ratio	if less than 1 = this indicates that this skill is well done
Cohort = late clinical	if more than 1 = this indicates that this skill is more in clinical than pre-clinical
sign of ANOVA	if less than 0.05 = this indicate significance difference of this variable in the three groups

Table (4) Clinical Skills Odds & cohort and ANOVA analysis

Variable	Odds Ratio		cohorts (group= late clinical)			ANOVA (between groups)					
	Value	95% Confidence Interval	Value	95% Confidence Interval	Sum of Squar	df	Mean Square	F	Sig.		
		Lower	Upper	Lower	Upper						
Skills with effective skill lab but need to improve and concentrate more in late clinical phase											
Surgical case history	1.737	0.87	3.466	0.757	0.53	1.08	32.253	2	16.126	35.532	0
Obstetric case history	2.69	1.331	5.434	0.61	0.425	0.876	28.212	2	14.106	28.608	0
Physical examination (SKIN)	1.253	0.585	2.684	0.896	0.623	1.287	12.859	2	6.429	12.55	0
A history taking (Resp. Sys.)	1.134	0.566	2.27	0.939	0.661	1.334	5.939	2	2.97	6.9	0.001
Inspection (Resp. Sys.)	1.263	0.582	2.742	0.887	0.589	1.335	7.828	2	3.914	14.572	0
Tracheal position (Resp. Sys.)	1.084	0.493	2.385	0.96	0.642	1.435	8.798	2	4.399	16.925	0
Chest expansion (Resp. Sys.)	1.374	0.627	3.012	0.848	0.555	1.295	8.394	2	4.197	13.647	0
Vocal fremitus (Resp. Sys.)	1.414	0.68	2.938	0.837	0.567	1.235	8.768	2	4.384	12.452	0
Percussion: (Dullness) (Resonance) (Resp. Sys.)	2.061	1.003	4.236	0.685	0.459	1.021	11.03	2	5.515	15.876	0
Auscultation (Rhonchi) (Crackles) (B. Breathing) (Resp. Sys.)	2.086	1.042	4.176	0.692	0.487	0.985	19.101	2	9.551	22.958	0
A history taking (Head & Neck)	1	0.503	1.989	1	0.709	1.41	17.101	2	8.551	24.891	0
Thyroid gland examination (Head & Neck)	1.535	0.771	3.055	0.806	0.567	1.145	12.859	2	6.429	23.049	0
Regional lymph nodes examination (Head & Neck)	2.125	1.052	4.294	0.679	0.465	0.99	14.071	2	7.035	18.248	0
Inspection abdomen (Digest. Sys.)	1.615	0.733	3.558	0.776	0.498	1.208	14.394	2	7.197	26.632	0
Palpation: a- Liver b- Spleen c- Kidney (Digest. Sys.)	1.733	0.79	3.801	0.746	0.478	1.166	31.949	2	15.975	53.194	0
Percussion (Ascitis) (Digest. Sys.)	1.615	0.733	3.558	0.776	0.498	1.208	37.162	2	18.581	65.463	0
Auscultation (bowel sound) (Digest. Sys.)	1.562	0.73	3.344	0.792	0.521	1.203	24.525	2	12.263	34.101	0
Interpretation of liver function tests (Digest. Sys.)	1.544	0.772	3.087	0.802	0.56	1.149	15.343	2	7.672	17.006	0
A history taking (Nerv. Sys.)	2.474	1.205	5.076	0.65	0.466	0.907	13.364	2	6.682	19.238	0
Sensory Nerves (Nerv. Sys.)	1.75	0.873	3.51	0.76	0.542	1.066	32.768	2	16.384	46.702	0
Motors nerves (Nerv. Sys.)	1.355	0.683	2.686	0.859	0.609	1.212	46.98	2	23.49	70.618	0
Cranial nerves (Nerv. Sys.)	1.976	0.985	3.965	0.707	0.49	1.019	29.727	2	14.864	35.445	0
A history taking (CVS)	1.44	0.726	2.857	0.833	0.591	1.176	12.646	2	6.323	19.772	0
Inspection (CVS)	1.64	0.82	3.279	0.778	0.543	1.114	11.949	2	5.975	17.421	0
Apex beat (CVS)	1.076	0.509	2.272	0.964	0.659	1.409	20.485	2	10.242	28.288	0
Thrill (CVS)	1	0.505	1.979	1	0.711	1.407	17.818	2	8.909	24.313	0
Percussion (CVS)	1.277	0.643	2.538	0.885	0.63	1.244	8.818	2	4.409	10.753	0
Auscultation (Heart sounds) (Murmurs)	1.22	0.597	2.49	0.907	0.641	1.283	8.01	2	4.005	7.939	0
Can you read normal Chest X- ray? (Heart size and Caliber)	1.426	0.68	2.994	0.842	0.595	1.192	17.737	2	8.869	20.924	0
Can you read normal Electrocardiography (ECG)?	2.571	1.153	5.733	0.656	0.475	0.907	11.646	2	5.823	14.496	0
Physical examination (Musculo-skeletal)	0.769	0.378	1.566	1.143	0.79	1.653	16.576	2	8.288	20.776	0
Physical examination (ENT)	1.224	0.595	2.518	0.905	0.638	1.284	20.192	2	10.096	24.364	0
Examination by Otoloscope (ENT)	2.65	1.212	5.793	0.645	0.467	0.891	27.283	2	13.641	30.037	0
A history taking (Male genital)	2.163	1.025	4.565	0.698	0.502	0.97	22.343	2	11.172	22.88	0
Interpretation of Lab. Tests (Male genital)	1.863	0.751	4.621	0.756	0.523	1.092	8.848	2	4.424	10.062	0
A history taking (Female genital)	2.265	1.047	4.9	0.688	0.495	0.955	19.101	2	9.551	19.873	0
Interpretation of Uterine Sonarograph (Female genital)	1	0.305	3.277	1	0.552	1.81	3.04	2	1.52	3.881	0.022
Interpretation of hormonal tests (Female genital)	1.447	0.435	4.816	0.843	0.505	1.406	4.919	2	2.46	6.206	0.002
A history of renal diseases (Kidney)	1.3	0.638	2.647	0.879	0.624	1.24	9.364	2	4.682	11.857	0
Can you read a normal abdominal X-ray (KUB X-ray)? (Kidney)	1	0.305	3.277	1	0.552	1.81	3.162	2	1.581	3.775	0.025

Skills with effective skill lab and effective late clinical phase

Pediatric case history	0.885	0.447	1.755	1.063	0.754	1.498	30.071	2	15.035	38.841	0
Interpretation the results of clinical history	0.686	0.341	1.377	1.212	0.843	1.74	35.283	2	17.641	43.713	0
A history taking (SKIN)	0.722	0.355	1.468	1.181	0.815	1.71	17.465	2	8.732	18.23	0
Lab. diagnostic tests (SKIN)	0.663	0.271	1.623	1.244	0.749	2.066	6.859	2	3.429	8.104	0
Can you read normal Chest X- ray? (Resp. Sys.)	0.707	0.34	1.471	1.195	0.81	1.764	13.121	2	6.561	16.67	0
A history taking (Digest. Sys.)	0.928	0.434	1.983	1.038	0.714	1.508	20.919	2	10.46	34.892	0
A history taking (Musculo-skeletal)	0.773	0.382	1.564	1.14	0.792	1.641	9.737	2	4.869	11.436	0
Interpretation of Lab. Tests (Musculo-skeletal)	0.756	0.323	1.768	1.157	0.73	1.835	8.394	2	4.197	8.952	0
A case history (EYE)	0.693	0.349	1.378	1.2	0.853	1.687	22.798	2	11.399	28.665	0
Examination by Ophthalmoscope (EYE)	0.726	0.359	1.467	1.177	0.817	1.697	16.131	2	8.066	23.228	0
Interpretation of Renal function test (Kidney)	0.884	0.334	2.34	1.065	0.641	1.77	3.465	2	1.732	3.955	0.021

Skills with poor - non effective skill lab- and need to improve more in late clinical phase

Physical examination (Head & Neck)	1.14	0.561	2.318	0.937	0.661	1.328	0.576	2	0.288	0.868	0.422
Taking a case history of patient and record the findings	1	0.501	1.994	1	0.708	1.412	52.364	2	26.182	90	0

Skills with effective skill lab and effective late clinical phase(no addition in late clinical phase)

Interpretation of X-ray image (Head & Neck)	0.906	0.379	2.165	1.051	0.671	1.647	2.434	2	1.217	2.231	0.11
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Value of Odds ratio

if less than 1 = this indicates that this skill is well done

Cohort = clinical

if more than 1 = this indicates that this skill is more in clinical than pre-clinical

sign of ANOVA

if less than 0.05 = this indicate significance difference of this variable in the three groups

Appendix II - Master Table row data

Communications Skills Analysis of variables by ANOVA & Odds ratio																
% of done not well & done well - in Early-clinical and Late clinical groups / value of Odds ratio and cohort = clinical / sign of ANOVA																
Crosstab 2X2 comparisone					Odds Ratio				ANOVA							
			Early clinical Vs Late clinical group		Total	Value	95% Confidence Interval				Sum of Squar	df	Mean Square	F	Sig.	
			Early-clinical	Late clinical			Lower	Upper								
Communicate with patient	done - not well	Count	18	20	38	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.862	0.406	1.834	Communicate with patient	Between Groups	13.859	2	6.929	20.591	0
		% within Communicate with patient	47.4%	52.6%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.928	0.629	1.369		Within Groups	65.621	195	0.337		
	done - well	Count	48	46	94	For cohort Early clinical Vs Late clinical groups = Late clinical	1.076	0.746	1.55	Total	79.48	197				
		% within Communicate with patient	51.1%	48.9%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within Communicate with patient	50.0%	50.0%	100.0%												
Make oral presentation	done - not well	Count	38	42	80	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.776	0.385	1.561	Make oral presentation	Between Groups	3.909	2	1.955	5.237	0.006
		% within Make oral presentation	47.5%	52.5%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.882	0.627	1.241		Within Groups	71.955	195	0.369		
	done - well	Count	28	24	52	For cohort Early clinical Vs Late clinical groups = Late clinical	1.138	0.794	1.63	Total	75.864	197				
		% within Make oral presentation	53.8%	46.2%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within Make oral presentation	50.0%	50.0%	100.0%												
Write Medical report	done - not well	Count	58	54	112	Odds Ratio for Measure of blood pressure (done not well / done - well)	1.611	0.612	4.243	Write Medical report	Between Groups	2.212	2	1.106	2.461	0.088
		% within Write Medical report	51.8%	48.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.295	0.735	2.28		Within Groups	87.652	195	0.449		
	done - well	Count	8	12	20	For cohort Early clinical Vs Late clinical groups = Late clinical	0.804	0.535	1.206	Total	89.864	197				
		% within Write Medical report	40.0%	60.0%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within Write Medical report	50.0%	50.0%	100.0%												
Communicate bad news	done - not well	Count	37	58	95	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.176	0.073	0.426	Communicate bad news	Between Groups	22.616	2	11.308	21.286	0
		% within Communicate bad news	38.9%	61.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.497	0.367	0.673		Within Groups	103.591	195	0.531		
	done - well	Count	29	8	37	For cohort Early clinical Vs Late clinical groups = Late clinical	2.824	1.498	5.324	Total	126.207	197				
		% within Communicate bad news	78.4%	21.6%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within Communicate bad news	50.0%	50.0%	100.0%												
Information and research Skills Analysis of variables by ANOVA & Odds ratio																
% of done not well & done well - in Early-clinical and Late clinical groups / value of Odds ratio and cohort = clinical / sign of ANOVA																
Crosstab 2X2 comparisone					Odds Ratio				ANOVA							
			Early clinical Vs Late clinical group		Total	Value	95% Confidence Interval				Sum of Squar	df	Mean Square	F	Sig.	
			Early-clinical	Late clinical			Lower	Upper								
The value and the use of information	done - not well	Count	50	56	106	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.558	0.232	1.342	The value and the use of information	Between Groups	8.273	2	4.136	9.133	0
		% within The value and the use of information	47.2%	52.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.767	0.532	1.104		Within Groups	88.318	195	0.453		
	done - well	Count	16	10	26	For cohort Early clinical Vs Late clinical groups = Late clinical	1.374	0.818	2.307	Total	96.591	197				
		% within The value and the use of information	61.5%	38.5%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within The value and the use of information	50.0%	50.0%	100.0%												
Design and use of research database	done - not well	Count	55	57	112	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.789	0.304	2.053	Design and use of research database	Between Groups	5.828	2	2.914	6.7	0.002
		% within Design and use of research database	49.1%	50.9%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.893	0.576	1.385		Within Groups	84.818	195	0.435		
	done - well	Count	11	9	20	For cohort Early clinical Vs Late clinical groups = Late clinical	1.131	0.674	1.898	Total	90.646	197				
		% within Design and use of research database	55.0%	45.0%	100.0%	N of Valid Cases	132									
	Total	Count	66	66	132											
	% within Design and use of research database	50.0%	50.0%	100.0%												

Clinical Skills Analysis of variables by ANOVA & Odds ratio

% of done not well & done well - in pre-clinical and clinical groups / value of Odds ratio and cohort = clinical / sign of ANOVA																
Crosstab 2X2 comparison					Odds Ratio				ANOVA							
		Early clinical Vs Late clinical group		Total	Value			95% Confidence Interval		Sum of Squar		df	Mean Square	F	Sig.	
		pre-clinical	clinical		Lower	Upper										
Taking a case history of patient and record	done - not well	Count	28	28	56	Odds Ratio for Measure of blood pressure (done not well / done well) =	1	0.501	1.994	case history of patient and record	Between Groups	52.264	2	26.182	90	0
		% within Taking a case history of patient and record	50.0%	50.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1	0.708	1.412		Within Groups	56.727	195	0.291		
	done - well	Count	38	38	76	For cohort Early clinical Vs Late clinical groups = Late clinical	1	0.708	1.412		Total	109.091	197			
		% within Taking a case history of patient and record	50.0%	50.0%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Taking a case history of patient and record	50.0%	50.0%	100.0%											
Surgical case history	done - not well	Count	35	26	61	Odds Ratio for Measure of blood pressure (done not well / done well) =	1.737	0.87	3.466	Surgical case history	Between Groups	32.253	2	16.126	35.532	0
		% within Surgical case history	57.4%	42.6%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.314	0.934	1.849		Within Groups	88.5	195	0.454		
	done - well	Count	31	40	71	For cohort Early clinical Vs Late clinical groups = Late clinical	0.757	0.53	1.08		Total	120.753	197			
		% within Surgical case history	43.7%	56.3%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Surgical case history	50.0%	50.0%	100.0%											
Obstetric case history	done - not well	Count	41	25	66	Odds Ratio for Measure of blood pressure (done not well / done well) =	2.69	1.331	5.434	Obstetric case history	Between Groups	28.212	2	14.106	28.608	0
		% within Obstetric case history	62.1%	37.9%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.64	1.142	2.355		Within Groups	96.152	195	0.493		
	done - well	Count	25	41	66	For cohort Early clinical Vs Late clinical groups = Late clinical	0.61	0.425	0.876		Total	124.364	197			
		% within Obstetric case history	37.9%	62.1%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Obstetric case history	50.0%	50.0%	100.0%											
Pediatric case history	done - not well	Count	34	36	70	Odds Ratio for Measure of blood pressure (done not well / done well) =	0.885	0.447	1.755	Pediatric case history	Between Groups	30.071	2	15.035	38.841	0
		% within Pediatric case history	48.6%	51.4%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.941	0.669	1.323		Within Groups	75.485	195	0.387		
	done - well	Count	32	30	62	For cohort Early clinical Vs Late clinical groups = Late clinical	1.063	0.754	1.498		Total	105.556	197			
		% within Pediatric case history	51.6%	48.4%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Pediatric case history	50.0%	50.0%	100.0%											
Interpretation the results of clinical history	done - not well	Count	36	42	78	Odds Ratio for Measure of blood pressure (done not well / done well) =	0.686	0.341	1.377	Interpretation the results of clinical history	Between Groups	35.283	2	17.641	43.713	0
		% within Interpretation the results of clinical history	46.2%	53.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.831	0.592	1.165		Within Groups	78.697	195	0.404		
	done - well	Count	30	24	54	For cohort Early clinical Vs Late clinical groups = Late clinical	1.212	0.843	1.74		Total	113.98	197			
		% within Interpretation the results of clinical history	55.6%	44.4%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Interpretation the results of clinical history	50.0%	50.0%	100.0%											
A history taking (SKIN)	done - not well	Count	39	44	83	Odds Ratio for Measure of blood pressure (done not well / done well) =	0.722	0.355	1.468	A history taking	Between Groups	17.465	2	8.732	18.23	0
		% within A history taking	47.0%	53.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.853	0.607	1.199		Within Groups	93.409	195	0.479		
	done - well	Count	27	22	49	For cohort Early clinical Vs Late clinical groups = Late clinical	1.181	0.815	1.71		Total	110.874	197			
		% within A history taking	55.1%	44.9%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within A history taking	50.0%	50.0%	100.0%											
Physical examination (SKIN)	done - not well	Count	49	46	95	Odds Ratio for Measure of blood pressure (done not well / done well) =	1.253	0.585	2.684	Physical examination	Between Groups	12.859	2	6.429	12.55	0
		% within Physical examination	51.6%	48.4%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.123	0.752	1.675		Within Groups	99.894	195	0.512		
	done - well	Count	17	20	37	For cohort Early clinical Vs Late clinical groups = Late clinical	0.896	0.623	1.287		Total	112.733	197			
		% within Physical examination	45.9%	54.1%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Physical examination	50.0%	50.0%	100.0%											
Lab. diagnostic tests (SKIN)	done - not well	Count	52	56	108	Odds Ratio for Measure of blood pressure (done not well / done well) =	0.663	0.271	1.623	Lab. diagnostic tests	Between Groups	6.859	2	3.429	8.104	0
		% within Lab. diagnostic tests	48.1%	51.9%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.825	0.558	1.22		Within Groups	82.515	195	0.423		
	done - well	Count	14	10	24	For cohort Early clinical Vs Late clinical groups = Late clinical	1.244	0.749	2.066		Total	89.374	197			
		% within Lab. diagnostic tests	58.3%	41.7%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Lab. diagnostic tests	50.0%	50.0%	100.0%											

A history taking (Resp. Sys.)	done - not well	Count	28	26	54	Odds Ratio for Measure of blood pressure (done not well / done - we	1.134	0.566	2.27	A history taking	Between Groups	5.939	2	2.97	6.9	0.001
		% within A history taking	51.9%	48.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.064	0.755	1.5		Within Groups	83.924	195	0.43		
	done - well	Count	38	40	78	For cohort Early clinical Vs Late clinical groups = Late clinical	0.939	0.661	1.334		Total	89.864	197			
		% within A history taking	48.7%	51.3%	100.0%	N of Valid Cases	132									
Inspection (Resp. Sys.)	done - not well	Count	19	16	35	Odds Ratio for Measure of blood pressure (done not well / done - we	1.263	0.582	2.742	Inspection	Between Groups	7.828	2	3.914	14.572	0
		% within Inspection	54.3%	45.7%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.12	0.776	1.617		Within Groups	52.379	195	0.269		
	done - well	Count	47	50	97	For cohort Early clinical Vs Late clinical groups = Late clinical	0.887	0.589	1.335		Total	60.207	197			
		% within Inspection	48.5%	51.5%	100.0%	N of Valid Cases	132									
Tracheal position (Resp. Sys.)	done - not well	Count	17	16	33	Odds Ratio for Measure of blood pressure (done not well / done - we	1.084	0.493	2.385	Tracheal position	Between Groups	8.798	2	4.399	16.925	0
		% within Tracheal position	51.5%	48.5%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.041	0.707	1.531		Within Groups	50.682	195	0.26		
	done - well	Count	49	50	99	For cohort Early clinical Vs Late clinical groups = Late clinical	0.96	0.642	1.435		Total	59.48	197			
		% within Tracheal position	49.5%	50.5%	100.0%	N of Valid Cases	132									
Chest expansion (Resp. Sys.)	done - not well	Count	19	15	34	Odds Ratio for Measure of blood pressure (done not well / done - we	1.374	0.627	3.012	Chest expansion	Between Groups	8.394	2	4.197	13.647	0
		% within Chest expansion	55.9%	44.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.165	0.811	1.675		Within Groups	59.97	195	0.308		
	done - well	Count	47	51	98	For cohort Early clinical Vs Late clinical groups = Late clinical	0.848	0.555	1.295		Total	68.364	197			
		% within Chest expansion	48.0%	52.0%	100.0%	N of Valid Cases	132									
Vocal fremitus (Resp. Sys.)	done - not well	Count	24	19	43	Odds Ratio for Measure of blood pressure (done not well / done - we	1.414	0.68	2.938	Vocal fremitus	Between Groups	8.768	2	4.384	12.452	0
		% within Vocal fremitus	55.8%	44.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.183	0.838	1.67		Within Groups	66.652	195	0.352		
	done - well	Count	42	47	89	For cohort Early clinical Vs Late clinical groups = Late clinical	0.837	0.567	1.235		Total	77.419	197			
		% within Vocal fremitus	47.2%	52.8%	100.0%	N of Valid Cases	132									
Percussion: (Dullness) (Resonance)	done - not well	Count	30	19	49	Odds Ratio for Measure of blood pressure (done not well / done - we	2.061	1.003	4.236	Percussion: (Dullness) (Reson	Between Groups	11.03	2	5.515	15.876	0
		% within Percussion: (Dullness) (Reson	61.2%	38.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.412	1.013	1.967		Within Groups	67.742	195	0.347		
	done - well	Count	36	47	83	For cohort Early clinical Vs Late clinical groups = Late clinical	0.685	0.459	1.021		Total	78.773	197			
		% within Percussion: (Dullness) (Reson	43.4%	56.6%	100.0%	N of Valid Cases	132									
Auscultation (Rhonchi) (Crackles) (E	done - not well	Count	39	27	66	Odds Ratio for Measure of blood pressure (done not well / done - we	2.086	1.042	4.176	Auscultation (Rhonchi) (Crackles) (E	Between Groups	19.101	2	9.551	22.958	0
		% within Auscultation (Rhonchi) (Crack	59.1%	40.9%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.444	1.015	2.055		Within Groups	81.121	195	0.416		
	done - well	Count	27	39	66	For cohort Early clinical Vs Late clinical groups = Late clinical	0.692	0.487	0.985		Total	100.222	197			
		% within Auscultation (Rhonchi) (Crack	40.9%	59.1%	100.0%	N of Valid Cases	132									
Can you read normal Chest X- ray? (Resp.	done - not well	Count	42	47	89	Odds Ratio for Measure of blood pressure (done not well / done - we	0.707	0.34	1.471	Can you read normal Chest X- ray?	Between Groups	13.121	2	6.561	16.67	0
		% within Can you read normal Chest X- ray?	47.2%	52.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.846	0.599	1.194		Within Groups	76.742	195	0.394		
	done - well	Count	24	19	43	For cohort Early clinical Vs Late clinical groups = Late clinical	1.195	0.81	1.764		Total	89.864	197			
		% within Can you read normal Chest X- ray?	55.8%	44.2%	100.0%	N of Valid Cases	132									
A history taking (Head & Neck)	done - not well	Count	37	37	74	Odds Ratio for Measure of blood pressure (done not well / done - we	1	0.503	1.989	A history taking	Between Groups	17.101	2	8.551	24.891	0
		% within A history taking	50.0%	50.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1	0.709	1.41		Within Groups	66.985	195	0.344		
	done - well	Count	29	29	58	For cohort Early clinical Vs Late clinical groups = Late clinical	1	0.709	1.41		Total	84.086	197			
		% within A history taking	50.0%	50.0%	100.0%	N of Valid Cases	132									
Physical examination (Head & Neck)	done - not well	Count	43	41	84	Odds Ratio for Measure of blood pressure (done not well / done - we	1.14	0.561	2.318	Physical examination	Between Groups	0.576	2	0.288	0.868	0.422
		% within Physical examination	51.2%	48.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.068	0.744	1.533		Within Groups	64.697	195	0.332		
	done - well	Count	23	25	48	For cohort Early clinical Vs Late clinical groups = Late clinical	0.937	0.661	1.328		Total	65.273	197			
		% within Physical examination	47.9%	52.1%	100.0%	N of Valid Cases	132									
Thyroid gland examination (Head & N	done - not well	Count	34	27	61	Odds Ratio for Measure of blood pressure (done not well / done - we	1.535	0.771	3.055	Thyroid gland examination	Between Groups	12.859	2	6.429	23.049	0
		% within Thyroid gland examination	55.7%	44.3%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.237	0.88	1.738		Within Groups	54.394	195	0.279		
	done - well	Count	32	39	71	For cohort Early clinical Vs Late clinical groups = Late clinical	0.806	0.567	1.145		Total	67.253	197			
		% within Thyroid gland examination	45.1%	54.9%	100.0%	N of Valid Cases	132									
Total	Count		66	66	132											
	% within		50.0%	50.0%	100.0%											

Regional lymph nodes examination (H)	done - not well	Count	34	22	56	Odds Ratio for Measure of blood pressure (done not well / done - we	2.125	1.052	4.294	Regional lymph nodes examination	Between Groups	14.071	2	7.035	18.248	0
		% within Regional lymph nodes examination	60.7%	39.3%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.442	1.029	2.021		Within Groups	75.182	195	0.386		
	done - well	Count	32	44	76	For cohort Early clinical Vs Late clinical groups = Late clinical	0.679	0.465	0.99		Total	89.253	197			
		% within Regional lymph nodes examination	42.1%	57.9%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Regional lymph nodes examination	50.0%	50.0%	100.0%											
Interpretation of X-ray image (Head & Neck)	done - not well	Count	53	54	107	Odds Ratio for Measure of blood pressure (done not well / done - we	0.906	0.379	2.165	Interpretation of X-ray image	Between Groups	2.434	2	1.217	2.231	0.11
		% within Interpretation of X-ray image	49.5%	50.5%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.953	0.624	1.453		Within Groups	106.379	195	0.546		
	done - well	Count	13	12	25	For cohort Early clinical Vs Late clinical groups = Late clinical	1.051	0.671	1.647		Total	108.813	197			
		% within Interpretation of X-ray image	52.0%	48.0%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Interpretation of X-ray image	50.0%	50.0%	100.0%											
A history taking (Digest. Sys.)	done - not well	Count	18	19	37	Odds Ratio for Measure of blood pressure (done not well / done - we	0.928	0.434	1.983	A history taking	Between Groups	20.919	2	10.46	34.892	0
		% within A history taking	48.6%	51.4%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.963	0.654	1.417		Within Groups	58.455	195	0.3		
	done - well	Count	48	47	95	For cohort Early clinical Vs Late clinical groups = Late clinical	1.038	0.714	1.508		Total	79.374	197			
		% within A history taking	50.5%	49.5%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within A history taking	50.0%	50.0%	100.0%											
Inspection abdomen (Digest. Sys.)	done - not well	Count	20	14	34	Odds Ratio for Measure of blood pressure (done not well / done - we	1.615	0.733	3.558	Inspection	Between Groups	14.394	2	7.197	26.632	0
		% within Inspection	58.8%	41.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.253	0.882	1.781		Within Groups	52.697	195	0.27		
	done - well	Count	46	52	98	For cohort Early clinical Vs Late clinical groups = Late clinical	0.776	0.498	1.208		Total	67.091	197			
		% within Inspection	46.9%	53.1%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Inspection	50.0%	50.0%	100.0%											
Palpation: a- Liver b- Spleen c- Kidn	done - not well	Count	21	14	35	Odds Ratio for Measure of blood pressure (done not well / done - we	1.733	0.79	3.801	Palpation: a- Liver b- Spleen c- K	Between Groups	31.949	2	15.975	53.194	0
		% within Palpation: a- Liver b- Spleen c-	60.0%	40.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.293	0.916	1.826		Within Groups	58.561	195	0.3		
	done - well	Count	45	52	97	For cohort Early clinical Vs Late clinical groups = Late clinical	0.746	0.478	1.166		Total	90.51	197			
		% within Palpation: a- Liver b- Spleen c-	46.4%	53.6%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Palpation: a- Liver b- Spleen c-	50.0%	50.0%	100.0%											
Percussion (Ascitis) (Digest. Sys.)	done - not well	Count	20	14	34	Odds Ratio for Measure of blood pressure (done not well / done - we	1.615	0.733	3.558	Percussion (Ascitis)	Between Groups	37.162	2	18.581	65.463	0
		% within Percussion (Ascitis)	58.8%	41.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.253	0.882	1.781		Within Groups	55.348	195	0.284		
	done - well	Count	46	52	98	For cohort Early clinical Vs Late clinical groups = Late clinical	0.776	0.498	1.208		Total	92.51	197			
		% within Percussion (Ascitis)	46.9%	53.1%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Percussion (Ascitis)	50.0%	50.0%	100.0%											
Auscultation (bowel sound) (Digest. Sys.)	done - not well	Count	22	16	38	Odds Ratio for Measure of blood pressure (done not well / done - we	1.562	0.73	3.344	Auscultation (bowel sound)	Between Groups	24.255	2	12.263	34.101	0
		% within Auscultation (bowel sound)	57.9%	42.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.237	0.875	1.749		Within Groups	70.121	195	0.36		
	done - well	Count	44	50	94	For cohort Early clinical Vs Late clinical groups = Late clinical	0.792	0.521	1.203		Total	94.646	197			
		% within Auscultation (bowel sound)	46.8%	53.2%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Auscultation (bowel sound)	50.0%	50.0%	100.0%											
Interpretation of liver function tests (Digest. Sys.)	done - not well	Count	32	25	57	Odds Ratio for Measure of blood pressure (done not well / done - we	1.544	0.772	3.087	Interpretation of liver function tes	Between Groups	15.343	2	7.672	17.006	0
		% within Interpretation of liver function tests	56.1%	43.9%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.238	0.883	1.737		Within Groups	87.97	195	0.451		
	done - well	Count	34	41	75	For cohort Early clinical Vs Late clinical groups = Late clinical	0.802	0.56	1.149		Total	103.313	197			
		% within Interpretation of liver function tests	45.3%	54.7%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Interpretation of liver function tests	50.0%	50.0%	100.0%											
A history taking (Nerv. Sys.)	done - not well	Count	47	33	80	Odds Ratio for Measure of blood pressure (done not well / done - we	2.474	1.205	5.076	A history taking	Between Groups	13.364	2	6.682	19.238	0
		% within A history taking	58.8%	41.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.608	1.075	2.405		Within Groups	67.727	195	0.347		
	done - well	Count	19	33	52	For cohort Early clinical Vs Late clinical groups = Late clinical	0.65	0.466	0.907		Total	81.091	197			
		% within A history taking	36.5%	63.5%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within A history taking	50.0%	50.0%	100.0%											
Sensory Nerves (Nerv. Sys.)	done - not well	Count	42	33	75	Odds Ratio for Measure of blood pressure (done not well / done - we	1.75	0.873	3.51	Sensory Nerves	Between Groups	32.768	2	16.384	46.702	0
		% within Sensory Nerves	56.0%	44.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.33	0.924	1.915		Within Groups	68.409	195	0.351		
	done - well	Count	24	33	57	For cohort Early clinical Vs Late clinical groups = Late clinical	0.76	0.542	1.066		Total	101.177	197			
		% within Sensory Nerves	42.1%	57.9%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Sensory Nerves	50.0%	50.0%	100.0%											
Motors nerves (Nerv. Sys.)	done - not well	Count	35	30	65	Odds Ratio for Measure of blood pressure (done not well / done - we	1.355	0.683	2.686	Motors nerves	Between Groups	46.98	2	23.49	70.618	0
		% within Motors nerves	53.8%	46.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.164	0.826	1.639		Within Groups	64.864	195	0.333		
	done - well	Count	31	36	67	For cohort Early clinical Vs Late clinical groups = Late clinical	0.859	0.609	1.212		Total	111.843	197			
		% within Motors nerves	46.3%	53.7%	100.0%	N of Valid Cases	132									
Total		Count	66	66	132											
		% within Motors nerves	50.0%	50.0%	100.0%											

A history taking (Male genital)	done - not well	Count	50	39	89	Odds Ratio for Measure of blood pressure (done not well / done - well)	2.163	1.025	4.565	A history taking	Between Groups	22.343	2	11.172	22.88	0
		% within A history taking	56.2%	43.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.51	0.983	2.32		Within Groups	95.212	195	0.488		
	done - well	Count	16	27	43	For cohort Early clinical Vs Late clinical groups = Late clinical	0.698	0.502	0.97		Total	117.556	197			
		% within A history taking	37.2%	62.8%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within A history taking	50.0%	50.0%	100.0%												
Interpretation of Lab. Tests (Male genital)	done - not well	Count	57	51	108	Odds Ratio for Measure of blood pressure (done not well / done - well)	1.863	0.751	4.621	Interpretation of Lab. tests	Between Groups	8.848	2	4.424	10.062	0
		% within Interpretation of Lab. tests	52.8%	47.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.407	0.815	2.431		Within Groups	85.742	195	0.44		
	done - well	Count	9	15	24	For cohort Early clinical Vs Late clinical groups = Late clinical	0.756	0.523	1.092		Total	94.591	197			
		% within Interpretation of Lab. tests	37.5%	62.5%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Interpretation of Lab. tests	50.0%	50.0%	100.0%												
A history taking (Female genital)	done - not well	Count	52	41	93	Odds Ratio for Measure of blood pressure (done not well / done - well)	2.265	1.047	4.9	A history taking	Between Groups	19.101	2	9.551	19.873	0
		% within A history taking	55.9%	44.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.558	0.987	2.459		Within Groups	93.712	195	0.481		
	done - well	Count	14	25	39	For cohort Early clinical Vs Late clinical groups = Late clinical	0.688	0.495	0.955		Total	112.813	197			
		% within A history taking	35.9%	64.1%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within A history taking	50.0%	50.0%	100.0%												
Interpretation of Uterine Sonarograph (Female genital)	done - not well	Count	60	60	120	Odds Ratio for Measure of blood pressure (done not well / done - well)	1	0.305	3.277	Interpretation of Uterine Sonarograph	Between Groups	3.04	2	1.52	3.881	0.022
		% within Interpretation of Uterine Sonarograph	50.0%	50.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1	0.552	1.81		Within Groups	76.379	195	0.392		
	done - well	Count	6	6	12	For cohort Early clinical Vs Late clinical groups = Late clinical	1	0.552	1.81		Total	79.419	197			
		% within Interpretation of Uterine Sonarograph	50.0%	50.0%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Interpretation of Uterine Sonarograph	50.0%	50.0%	100.0%												
Interpretation of hormonal tests (Female genital)	done - not well	Count	61	59	120	Odds Ratio for Measure of blood pressure (done not well / done - well)	1.447	0.435	4.816	Interpretation of hormonal tests	Between Groups	4.919	2	2.46	6.206	0.002
		% within Interpretation of hormonal tests	50.8%	49.2%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.22	0.611	2.438		Within Groups	77.288	195	0.396		
	done - well	Count	5	7	12	For cohort Early clinical Vs Late clinical groups = Late clinical	0.843	0.505	1.406		Total	82.207	197			
		% within Interpretation of hormonal tests	41.7%	58.3%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Interpretation of hormonal tests	50.0%	50.0%	100.0%												
A case history (EYE)	done - not well	Count	28	34	62	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.693	0.349	1.378	A case history	Between Groups	22.798	2	11.399	28.665	0
		% within A case history	45.2%	54.8%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.832	0.587	1.179		Within Groups	77.545	195	0.398		
	done - well	Count	38	32	70	For cohort Early clinical Vs Late clinical groups = Late clinical	1.2	0.853	1.687		Total	100.343	197			
		% within A case history	54.3%	45.7%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within A case history	50.0%	50.0%	100.0%												
Examination by Ophthalmoscope (EYE)	done - not well	Count	38	43	81	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.726	0.359	1.467	Examination by Ophthalmoscope	Between Groups	16.131	2	8.066	23.228	0
		% within Examination by Ophthalmoscope	46.9%	53.1%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.854	0.608	1.2		Within Groups	67.712	195	0.347		
	done - well	Count	28	23	51	For cohort Early clinical Vs Late clinical groups = Late clinical	1.177	0.817	1.697		Total	83.843	197			
		% within Examination by Ophthalmoscope	54.9%	45.1%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Examination by Ophthalmoscope	50.0%	50.0%	100.0%												
A history of renal diseases (Kidney)	done - not well	Count	44	40	84	Odds Ratio for Measure of blood pressure (done not well / done - well)	1.3	0.638	2.647	A history of renal diseases	Between Groups	9.364	2	4.682	11.857	0
		% within A history of renal diseases	52.4%	47.6%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1.143	0.79	1.653		Within Groups	77	195	0.395		
	done - well	Count	22	26	48	For cohort Early clinical Vs Late clinical groups = Late clinical	0.879	0.624	1.24		Total	86.364	197			
		% within A history of renal diseases	45.8%	54.2%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within A history of renal diseases	50.0%	50.0%	100.0%												
Interpretation of Renal function test (Kidney)	done - not well	Count	56	57	113	Odds Ratio for Measure of blood pressure (done not well / done - well)	0.884	0.334	2.34	Interpretation of Renal function test	Between Groups	3.465	2	1.732	3.955	0.021
		% within Interpretation of Renal function test	49.6%	50.4%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	0.942	0.591	1.5		Within Groups	85.409	195	0.438		
	done - well	Count	10	9	19	For cohort Early clinical Vs Late clinical groups = Late clinical	1.065	0.641	1.77		Total	88.874	197			
		% within Interpretation of Renal function test	52.6%	47.4%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Interpretation of Renal function test	50.0%	50.0%	100.0%												
Can you read a normal abdominal X-ray (Kidney)	done - not well	Count	60	60	120	Odds Ratio for Measure of blood pressure (done not well / done - well)	1	0.305	3.277	Can you read a normal abdominal X-ray (Kidney)	Between Groups	3.162	2	1.581	3.775	0.025
		% within Can you read a normal abdominal X-ray (Kidney)	50.0%	50.0%	100.0%	For cohort Early clinical Vs Late clinical groups = Early-clinical	1	0.552	1.81		Within Groups	81.667	195	0.419		
	done - well	Count	6	6	12	For cohort Early clinical Vs Late clinical groups = Late clinical	1	0.552	1.81		Total	84.828	197			
		% within Can you read a normal abdominal X-ray (Kidney)	50.0%	50.0%	100.0%	N of Valid Cases	132									
Total	Count	66	66	132												
	% within Can you read a normal abdominal X-ray (Kidney)	50.0%	50.0%	100.0%												