4.3.4.4 *Airway and cervical spine control C4_1 to C4_14; D4_1 to D4_14*

This question will be analysed in seven parts because the actions are related to each other, and to simplify the figures.

a) *Part 1 C4_1 to C4_4; D4_1 to D4_4*

Part 1 provides the results and analysis of performance of the first four skills pertaining to airway and cervical spine control: foreign body removal: upper airway, oropharyngeal airway insertion, nasopharyngeal airway insertion and cricoid pressure (Sellick's manoeuvre).

Figures 4.23 and 4.24 illustrate the skills visually by indicating the mean score for each variable.

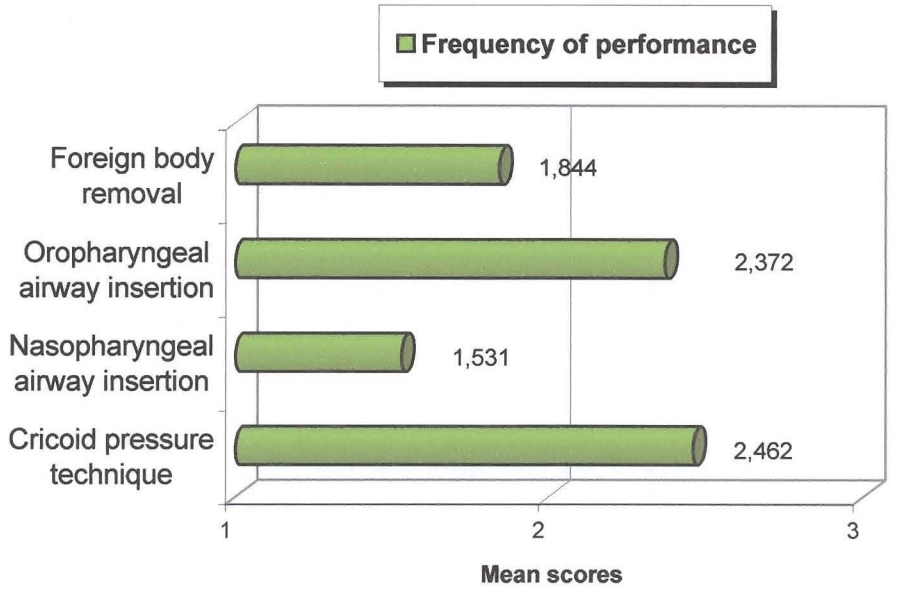

Figure 4.23 - Airway and cervical spine control (Part 1)

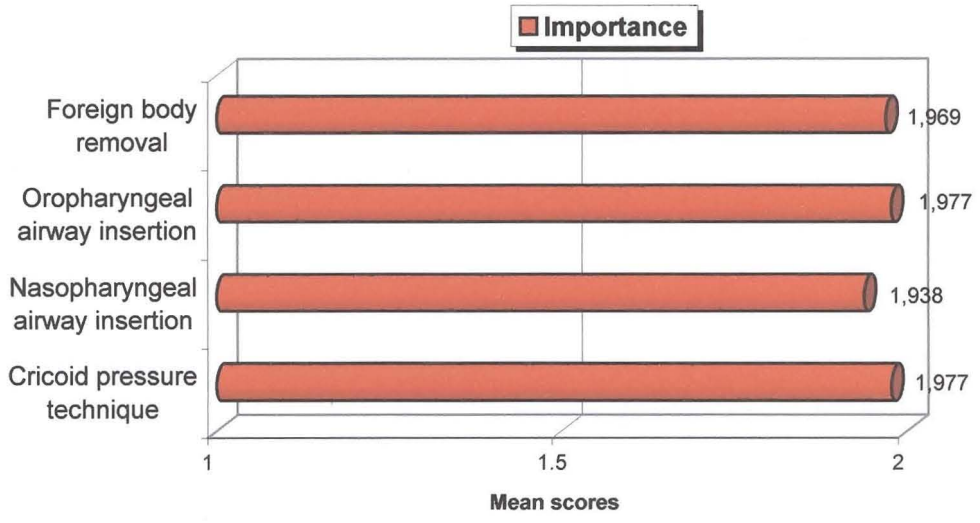

Figure 4.24 - Airway and cervical spine control (Part 1)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they frequently perform oropharyngeal airway insertion (52,7%) and cricoid pressure technique (57,0%). Foreign body removal from the upper airway and insertion of the nasopharyngeal airway were seldom/never or frequently performed.

Table 4.16 reflects the *importance* of these skills to be included in the curriculum and the majority of the respondents indicated that they agree that all four these skills are important and should be included in the curriculum.

b) Part 2 C4_51 to C4_53; D4_51 to D4_53

Part 2 provides the results and analysis of performance of three skills pertaining to airway and cervical spine control: laryngeal mask airway, oesophageal-tracheal combitube airway and orotracheal intubation.

Figures 4.25 and 4.26 illustrate the three skills visually by indicating the mean score for each variable.

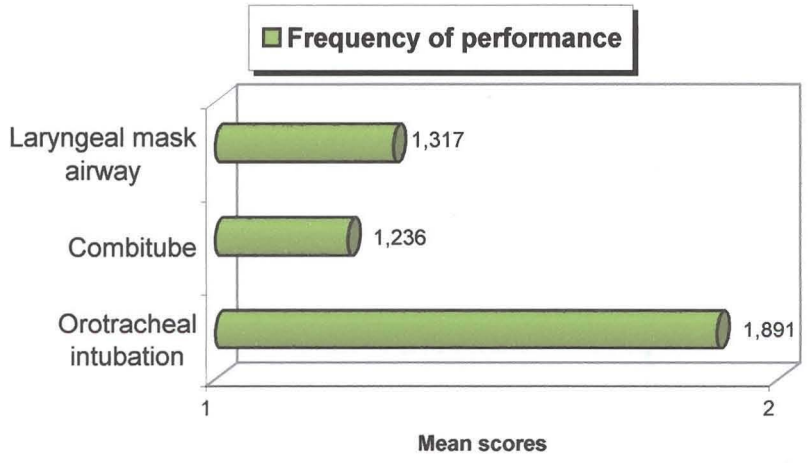

Figure 4.25 -Airway and cervical spine control (Part 2)

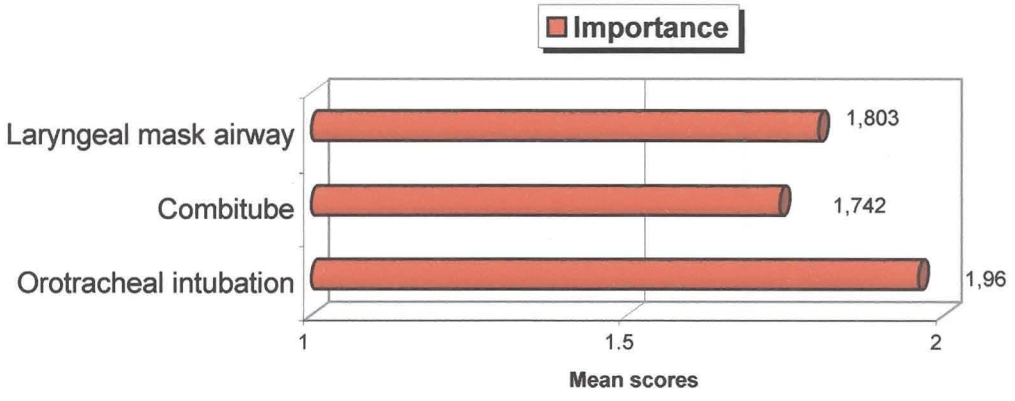

Figure 4.26 - Airway and cervical spine control (Part 2)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they seldom/never perform laryngeal mask airway and oesophageal-tracheal combitube. Orotracheal intubation, however, was distributed almost equally over the whole continuum.

Table 4.16 reflects the *importance* of these skills to be included in the curriculum and the majority of the respondents indicated that they agree that these skills are important and should be included in the curriculum.

c) *Part 3 C4_54 to C4_56; D4_54 to D4_56*

Part 3 provides the results and analysis of performance of the first three skills pertaining to airway and cervical spine control: nasotracheal intubation, blind endotracheal intubation and retrograde intubation.

Figures 4.27 and 4.28 illustrate the three skills visually by indicating the mean score for each variable.

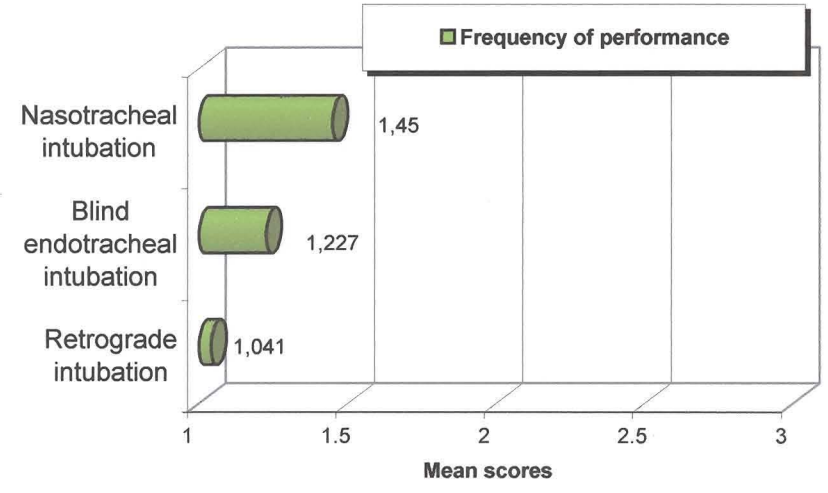

Figure 4.27 - Airway and cervical spine control (Part 3)

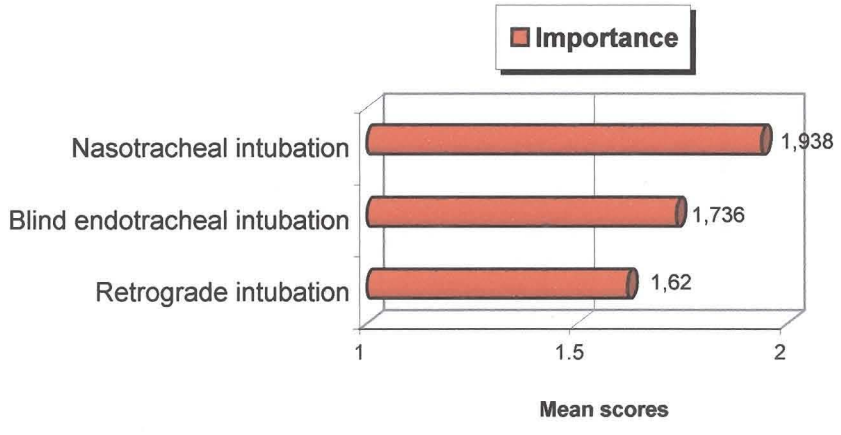

Figure 4.28 – Airway and cervical spine control (Part 3)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they perform the skills seldom/never.

Table 4.16 reflects the *importance* of these skills to be included in the curriculum. Although the majority of the respondents indicated that all three skills are important and should be included in the curriculum, it was to a lesser extent evident regarding blind endotracheal intubation (73,6%) and retrograde intubation (62,0%).

d) Part 4 C4_6 to C4_8; D4_6 to D4_8

Part 4 provides the results and analysis of performance of three skills pertaining to airway and cervical spine control: percutaneous transtracheal ventilation, needle cricothyroidotomy and surgical cricothyroidotomy.

Figures 4.29 and 4.30 illustrate the three skills visually by indicating the mean score for each variable.

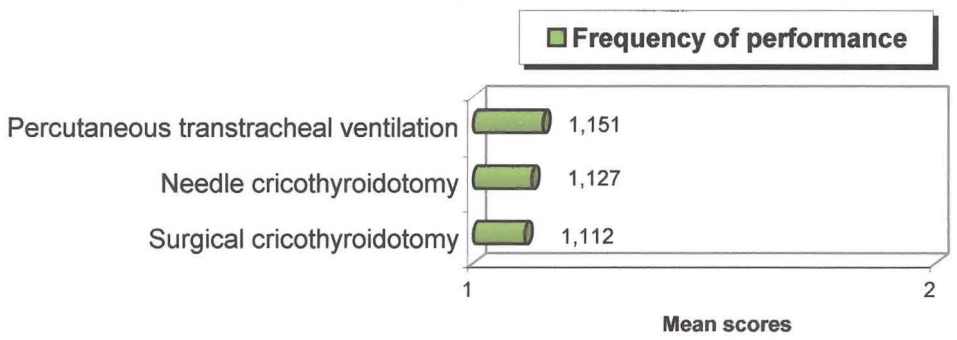

Figure 4.29 - Airway and cervical control (Part 4)

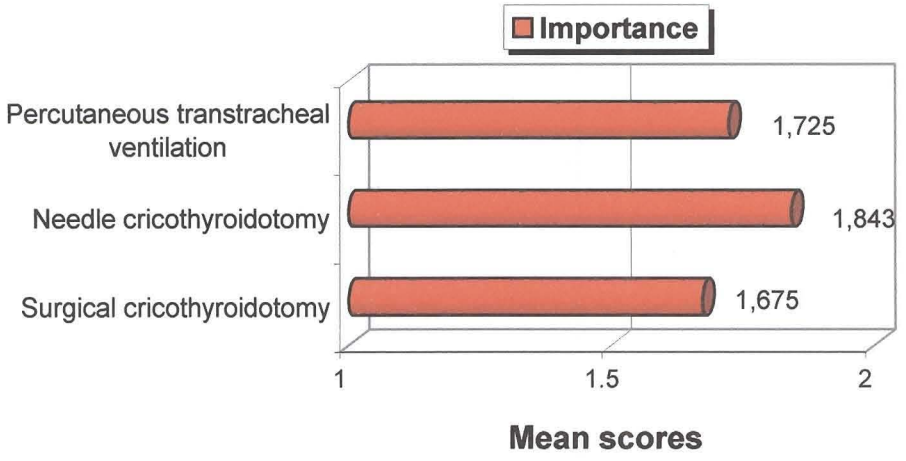

Figure 4.30 - Airway and cervical control (Part 4)

Table 4.15 summarises the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they perform the skills seldom/never.

Table 4.16 summarises the *importance* of these skills to be included in the curriculum. Although the majority of the respondents indicated that all three skills are important and should be included in the curriculum, it was to a lesser extent evident regarding percutaneous transtracheal ventilation (73,3%) and surgical cricothyroidotomy (66,4%).

e) Part 5 C4_9 to C4_11; D4_9 to D4_11

Part 1 provides the results and analysis of performance of three skills pertaining to airway and cervical spine control: surgical tracheostomy, endotracheal suctioning and spinal immobilisation.

Figures 4.31 and 4.32 illustrate the three skills by indicating the mean score for each variable.

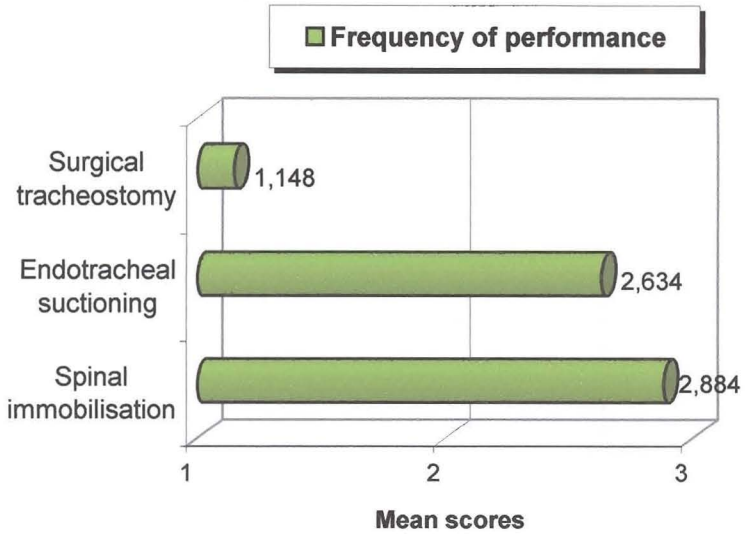

Figure 4.31- Airway and cervical spine control (Part 5)

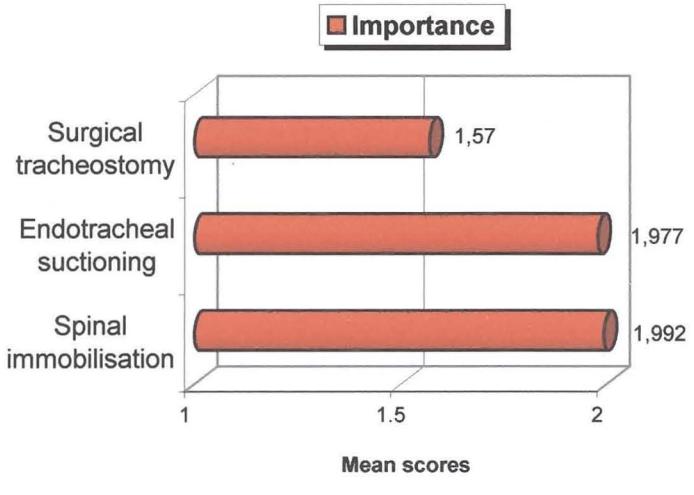

Figure 4.32 - Airway and cervical spine control (Part 5)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they perform surgical tracheostomy seldom/never (88,7%), and endotracheal suctioning (70,1%) and spinal immobilisation frequently (89,6%).

Table 4.16 reflects the *importance* of these skills to be included in the curriculum. The majority of the respondents indicated that endotracheal suctioning and spinal immobilisation should be included in the curriculum, but only 58,1% indicated that surgical tracheostomy should be included.

f) Part 6 C4_121 to C4_123; D4_121 to D4_123

Part 6 provides the results and analysis of performance of three skills pertaining to airway and cervical spine control: cervical collars, head immobilising devices and spine board.

Figures 4.33 and 4.34 illustrate the skills visually by indicating the mean score for each variable.

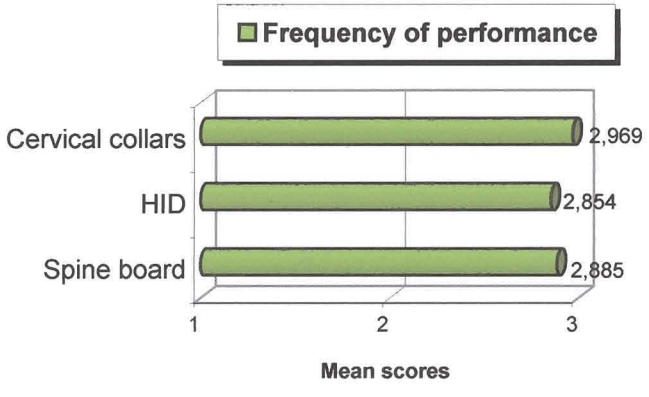

Figure 4.33 - Airway and cervical spine control (Part 6)

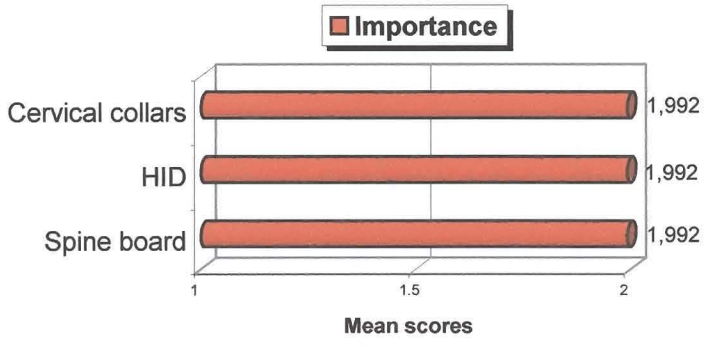

Figure 4.34 - Airway and cervical spine control (Part 6)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they frequently perform the skills.

Table 4.16 reflects the *importance* of these skills to be included in the curriculum and the majority of the respondents indicated that they agree that these skills are important and should be included in the curriculum.

g) Part 7 C4_124 to C4_14; D4_124 to D4_14

Part 7 provides the results and analysis of performance of four skills pertaining to airway and cervical spine control: scoop stretcher, vacuum splints, log-rolling and cervical spine X-ray interpretation.

Figures 4.35 and 4.36 reflect the skills visually by indicating the mean score for each variable.

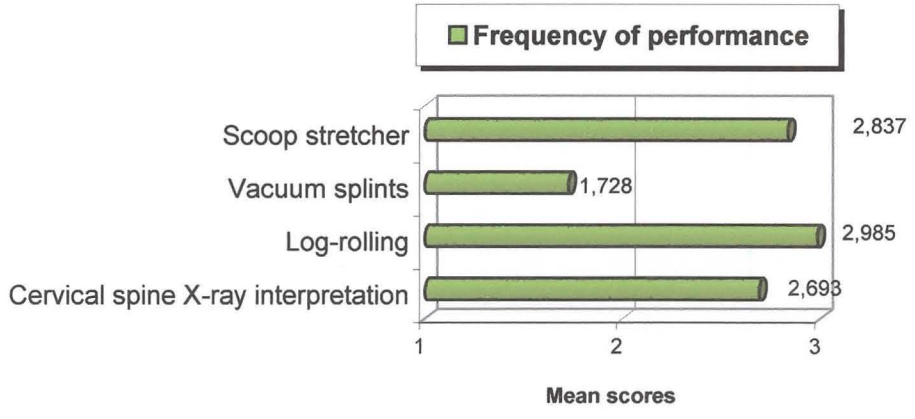

Figure 4.35 - Airway and cervical control (Part 7)

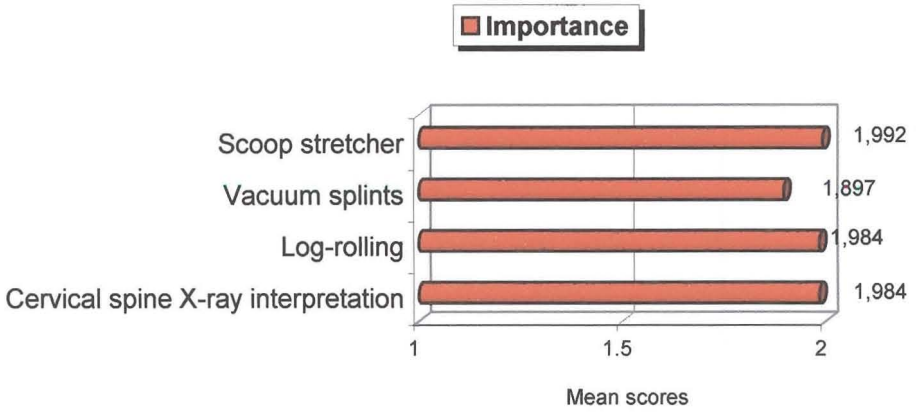

Figure 4.36 - Airway and cervical control (Part 7)

Table 4.15 reflects the *frequency of performance* of advanced life-support skills pertaining to airway and cervical spine control. Note that the majority of the respondents indicated that they frequently perform scoop stretcher, log-rolling and cervical spine X-ray interpretation. Vacuum splints were applied seldom/never (57,9%) by the respondents.

Table 4.16 reflects the *importance* of these skills to be included in the curriculum and the majority of the respondents indicated that they agree that these skills are important and should be included in the curriculum.

The degree of relationship between the frequency of performance and importance of the skills to be included in the curriculum as indicated by the Spearman correlation (see Annexure D – Spearman correlation between the variables in Section C and Section D) illustrated the following:

- Foreign body removal: upper airway indicated a significant Spearman correlation coefficient (r_s 0,196)
- Laryngeal mask airway indicated a highly significant Spearman correlation coefficient (r_s 0,257)
- Oesophageal-tracheal combitube airway (Combitube) indicated a highly significant Spearman correlation coefficient (r_s 0,292)
- Nasotracheal intubation indicated a highly significant Spearman correlation coefficient (r_s 0,293)

- Blind endotracheal intubation indicated a highly significant Spearman correlation coefficient (r_s 0,291)
- Retrograde intubation indicated a highly significant Spearman correlation coefficient (r_s 0,342)
- Needle cricothyroidotomy indicated a significant Spearman correlation coefficient (r_s 0,218)
- Surgical cricothyroidotomy indicated a highly significant Spearman correlation coefficient (r_s 0,249)
- Surgical tracheostomy indicated a highly significant Spearman correlation coefficient (r_s 0,384)
- Cervical collars indicated a significant Spearman correlation coefficient (r_s 0,200)
- Head immobilising devices indicated a significant Spearman correlation coefficient (r_s 0,185)
- Spine board indicated a significant Spearman correlation coefficient (r_s 0,212)
- Scoop stretcher indicated a significant Spearman correlation coefficient (r_s 0,191)
- Vacuum splints indicated a highly significant Spearman correlation coefficient (r_s 0.333)
- Log-rolling indicated a significant Spearman correlation coefficient (r_s 0.175)
- Cervical spine X-ray interpretation indicated a highly significant Spearman correlation coefficient (r_s 0.291)

Table 4.15 – Frequency of performance of advanced life-support skills (%) C4_1 to C4_14

Skills	State hospitals						Private hospitals						Total						X^2	df†
	Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Airway and cervical spine control																				
Part 1																				
Foreign body removal: upper airway	17	51,5	3	9,1	13	39,4	41	45,1	23	25,3	27	29,7	58	46,8	26	21,0	40	32,3	3,951	2
Oropharyngeal airway insertion	5	15,2	4	12,1	24	72,7	15	16,3	36	39,1	41	44,6	20	16,0	40	32,0	65	52,0	9,262**	2
Nasopharyn-geal airway insertion	21	67,7	3	9,7	7	22,6	61	65,6	15	16,1	17	18,3	82	66,1	18	14,5	24	19,4	0,905	2
Cricoid pressure technique (Sellick's manoeuvre)	2	6,1	9	27,3	22	66,7	12	12,9	32	34,4	49	52,7	14	11,1	41	32,5	71	56,4	2,252	2

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$

Table 4.15 – (continued)

Skills	State hospitals						Private hospitals						Total						X^2	df†
	Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Part 2																				
Airway intubation																				
Laryngeal mask airway	26	83,9	2	6,5	3	9,7	69	75,8	12	13,2	10	11,0	95	77,9	14	11,5	13	10,7	1,144	2
Oesophageal-tracheal combitube airway (Combitube)	24	80,0	3	10,0	3	10,0	76	85,4	6	6,7	7	7,9	100	84,0	9	7,6	10	8,4	0,514	2
Orotracheal intubation	14	45,2	5	16,1	12	38,7	35	37,6	35	37,6	23	24,7	49	39,5	40	32,3	35	28,2	5,276	2
Part 3																				
Nasotracheal intubation	21	65,6	5	15,6	6	18,8	68	73,1	13	14,0	12	12,9	89	71,2	18	14,4	18	14,4	0,798	2
Blind endotracheal intubation	26	81,3	2	6,3	4	12,5	78	84,8	10	10,9	4	4,4	104	83,9	12	9,7	8	6,5	3,005	2
Retrograde intubation	31	100,0	0	0,0	0	0,0	85	96,6	1	1,1	2	2,3	116	97,5	1	0,8	2	1,7	1,084	2

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$

Table 4.15 – (continued)

Skills	State hospitals						Private hospitals						Total						X^2	df†
	Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Part 4																				
Percuta-neous transtracheal ventilation	26	92,9	0	0,0	2	7,1	77	88,5	6	6,9	4	4,6	103	89,6	6	5,2	6	5,2	2,239	2
Needle crico-thyroidotomy	26	89,7	1	3,5	2	6,9	85	91,4	5	5,4	3	3,2	111	91,0	6	4,9	5	4,1	0,901	2
Surgical crico-thyroidotomy	27	93,1	0	0,0	2	6,9	84	91,3	6	6,5	2	2,2	111	91,7	6	5,0	4	3,3	3,387	2
Part 5																				
Surgical tracheostomy	27	87,1	3	9,7	1	3,2	83	89,3	6	6,5	4	4,3	110	88,7	9	7,3	5	4,0	0,412	2
Endotracheal suctioning	1	3,13	4	12,5	27	84,4	8	8,4	25	26,3	62	65,3	9	7,1	29	22,8	89	70,1	4,196	2
Spinal immobilisation	1	3,23	1	3,23	29	93,6	1	1,1	10	10,6	83	88,3	2	1,6	11	8,8	112	89,6	2,208	2

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$

Table 4.15 – (continued)

Skills	State hospitals						Private hospitals						Total						X^2	df†
	Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently		Seldom / Never		Periodically		Frequently			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Part 6																				
Immobilisation devices																				
Cervical collars	0	0,0	0	0,0	100	100,0	0	0,0	2	2,1	93	97,9	0	0,0	2	1,6	125	98,4	0,685	1
Head immobilising devices (HID/Femo blocks)	4	12,9	3	9,7	24	77,4	2	2,1	3	3,2	90	94,7	6	4,8	6	4,8	114	90,5	8,584	2
Spine board	2	6,3	5	15,6	25	78,1	1	1,1	2	2,1	92	96,8	3	2,4	7	5,5	117	92,13	11,586	2
Part 7																				
Scoop stretcher	4	12,9	3	9,7	24	77,4	2	2,1	4	4,3	88	93,6	6	4,8	7	5,6	112	89,6	7,546	2
Vacuum splints	23	76,7	0	0,0	7	23,3	47	51,7	14	15,4	30	33,0	70	57,9	14	11,6	37	30,6	7,741	2
Log-rolling	0	0,0	0	0,0	32	100,0	0	0,0	1	1,1	94	99,0	0	0,0	1	0,8	126	99,2	0,340	1
Cervical spine X-ray interpretation	10	32,3	2	6,5	19	61,3	4	4,4	5	5,4	83	90,2	14	11,4	7	5,7	102	82,9	18,251	2

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$

Table 4.16 – Importance of advanced life-support skills (%) D4_1 to D4_14

Skills	State hospitals				Private hospitals				Total				X^2	df†
	Disagree		Agree		Disagree		Agree		Disagree		Agree			
	N	%	N	%	N	%	N	%	N	%	N	%		
Airway and cervical spine control														
Part 1														
Foreign body removal: upper airway	2	6,5	29	93,6	2	2,1	92	97,9	4	3,2	121	96,8	1,407	1
Oropharyngeal airway insertion	2	6,5	29	93,6	1	1,1	93	98,9	3	2,4	122	97,6	2,889	1
Nasopharyngeal airway insertion	2	6,5	29	93,6	6	6,4	88	93,6	8	6,4	117	93,6	0,000	1
Cricoid pressure technique (Sellick's manoeuvre)	1	3,2	30	96,8	2	2,1	92	97,9	3	2,4	122	97,6	0,120	1
Part 2														
Airway intubation														
Laryngeal mask airway	6	19,4	25	80,7	19	20,7	73	79,4	25	20,3	98	79,7	0,024	1
Oesophageal-tracheal combitube airway (Combitube)	8	26,7	22	73,3	23	25,6	67	74,4	31	25,8	89	74,2	0,015	1
Orotracheal intubation	2	6,9	27	93,1	3	3,3	89	96,7	5	4,1	116	95,9	0,736	1
Part 3														
Nasotracheal intubation	2	6,7	28	93,3	5	5,3	89	94,7	7	5,7	117	94,4	0,078	1
Blind endotracheal intubation	9	30,0	21	70,0	23	25,3	68	74,7	32	26,5	89	73,6	0,259	1
Retrograde intubation	14	50,0	14	50,0	30	33,7	59	66,3	44	37,6	73	62,4	2,409	1

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$

Table 4.16 – (continued)

Skills	State hospitals				Private hospitals				Total				X^2	df†
	Disagree		Agree		Disagree		Agree		Disagree		Agree			
	N	%	N	%	N	%	N	%	N	%	N	%		
Part 4														
Percutaneous transtracheal ventilation	10	38,5	16	61,5	21	23,3	69	76,7	31	26,7	85	73,3	2,358	1
Needle cricothyroidotomy	8	26,7	22	73,3	12	12,9	81	87,1	20	16,3	103	83,7	3,156	1
Surgical cricothyroidotomy	13	43,3	17	56,7	28	30,4	64	69,6	41	33,6	81	66,4	1,687	1
Part 5														
Surgical tracheostomy	15	48,4	16	51,6	37	39,8	56	60,2	52	41,9	72	58,1	0,707	1
Endotracheal suctioning	1	3,3	29	96,7	2	2,1	92	97,9	3	2,4	121	97,6	0,140	1
Spinal immobilisation	1	3,3	29	96,7	0	0,0	93	100,0	1	0,8	122	99,2	3,125	1
Part 6														
Immobilising devices														
Cervical collars	1	3,2	30	96,8	0	0,0	94	100,0	1	0,8	124	99,2	3,057	1
Head immobilising devices (HID/Ferno blocks)	1	3,2	30	96,8	0	0,0	94	100,0	1	0,8	124	99,2	3,057	1
Part 7														
Spine board	1	3,2	30	96,8	0	0,0	94	100,0	1	0,8	124	99,2	3,057	1
Scoop stretcher	1	3,2	30	96,8	0	0,0	94	100,0	1	0,8	124	99,2	3,057	1
Vacuum splints	5	17,2	24	82,8	8	8,6	85	91,4	13	10,7	109	89,3	1,733	1
Log-rolling	1	3,2	30	96,7	1	1,1	93	98,9	2	1,6	123	98,4	0,692	1
Cervical spine X-ray interpretation	2	6,5	29	93,6	0	0,0	94	100,0	2	1,6	123	98,4	6,163	1

† Degrees of freedom
* $p < 0,05$
** $p < 0,01$