Predicting success on a special forces selection course: Validating standards

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Predicting Success on a Special Forces Selection Course: Validating Standards

Australian Government
Department of Defence
Defence Science and Technology Organisation

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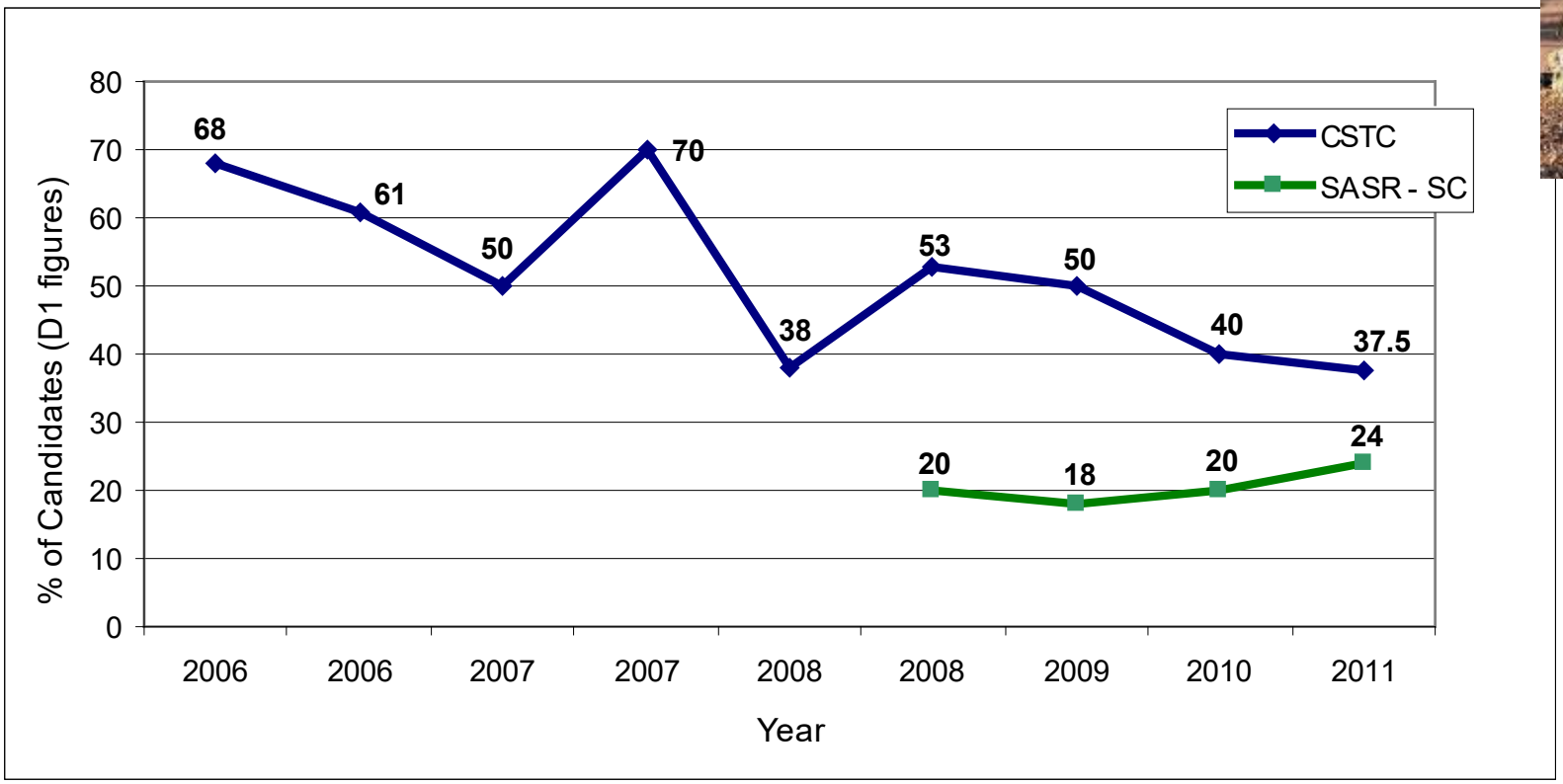
- Introduction & Background:



AIM: To validate proposed SFET standards as a means of predicting SF selection course survivability

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- Methods:

Candidates volunteering to undergo SFET as part of their application for entry onto the SAS-SC

SFET: 5 sessions x 4 Locations

Analysis 1: Is there a difference in fitness levels between CSTC and SAS-SC candidates?

Analysis 2: Is there a difference in fitness levels between successful CSTC and SAS-SC candidates?

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?

Assessment
Sit and Reach
Vertical Jump
Push Ups
7-Stage Sit Up
Heaves
Agility
Beep Test
Yoyo
5km Pack March
Swim Test

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- Methods:

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?

Push Ups (≥66 repetitions)

7-Stage Sit Up (≥ Stage 5)

5-km Pack March (≤45 min 30 s)

AGE	WGT	HGT	V. Jump	Flex	P Ups	S up	HVS	BEEP	AGIL	YO-YO	5 KM	SWIM
23	70	177	56	18	72	4	14	11.13	8.62	18.02	39.07	8.10
25	73	173	66	24	86	6	14	12.70	9.20	19.02	45.26	9.15
31	86	175	66	24	70	5	20	13.50	8.51	19.03	41.28	7.30
36	73	175	50	19	93	5	8	12.12	8.99	19.10	45.33	8.04
28	77	172	60	13	61	4	13	12.20	8.58	18.02	48.07	8.38
27	93	190	66	10	60	4	6	12.70	8.23	19.02	44.35	9.31
31	97	188	56	22	103	5	14	12.20	9.00	19.03	45.39	7.47

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- Results:

Analysis 1: Is there a difference in fitness levels between CSTC and SAS-SC candidates?

	SAS-SC 01/11	CSTS 01/11
Group Size (n)	97	104
Age (y)	27.6	26.0
Height (cm) #	**182.5**	**178.6**
Weight (kg)*	**85.40**	**81.54**
Vertical Jump (cm) #	**58.66**	**55.67**
Sit and Reach (cm) #	**15.26**	**30.66 ?**
Push Ups (count)	68.48	65.01
7-Stage Sit Up (stage)	4.24	4.35
Heaves (count)	11.50	12.03
Agility (s) #	**8.89**	**8.03**
Beep Test (Level.shuttle)	12.1	12.3
VO2max (mL.kg-1.min-1)	54.39	54.52
Yoyo (laps) #	**19.29**	**18.72**
Pack March (min:s)	45:02	45:41
Swim Test (min:s)	8:18	8:46

Significant at p<0.01

* Significant at p <0.05

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- Results:

Analysis 2: Is there a difference in fitness levels between successful CSTC and SAS-SC candidates?

	SAS-SC 01/11	CSTS 01/11
Group Size (n)	23	39
Age (y) #	**26.5**	**23.9**
Height (cm) *	**185.2**	**180.4**
Weight (kg) #	**88.1**	**81.4**
Vertical Jump (cm)	57.2	55.7
Sit and Reach (cm) #	**14.3**	**31.2**
Push Ups (count)	70.7	69.2
7-Stage Sit up (stage)	4.0	4.6
Heaves (count) *	**10.8**	**12.2**
Agility (s) #	**9.05**	**8.08**
Beep Test (Level.shuttle)	12.2	12.5
VO2max (mL.kg-1.min-1)	54.2	55.1
Yo- Yo (laps) #	**19.5**	**18.7**
Pack March (min:s)	44:15	45:15
Swim (min:s)	7:52	8:36

Significant at p<0.01

* Significant at p <0.05

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- Results / Discussion:

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?

	PASSED		FAILED	
	NUMBER OF PERS	% OF GROUP	NUMBER OF PERS	% OF GROUP
PASSED ALL	1	8%	12	92%
FAILED 1	10	30%	23	70%
FAILED 2	9	27%	24	73%
FAILED 3	1	8%	12	92%

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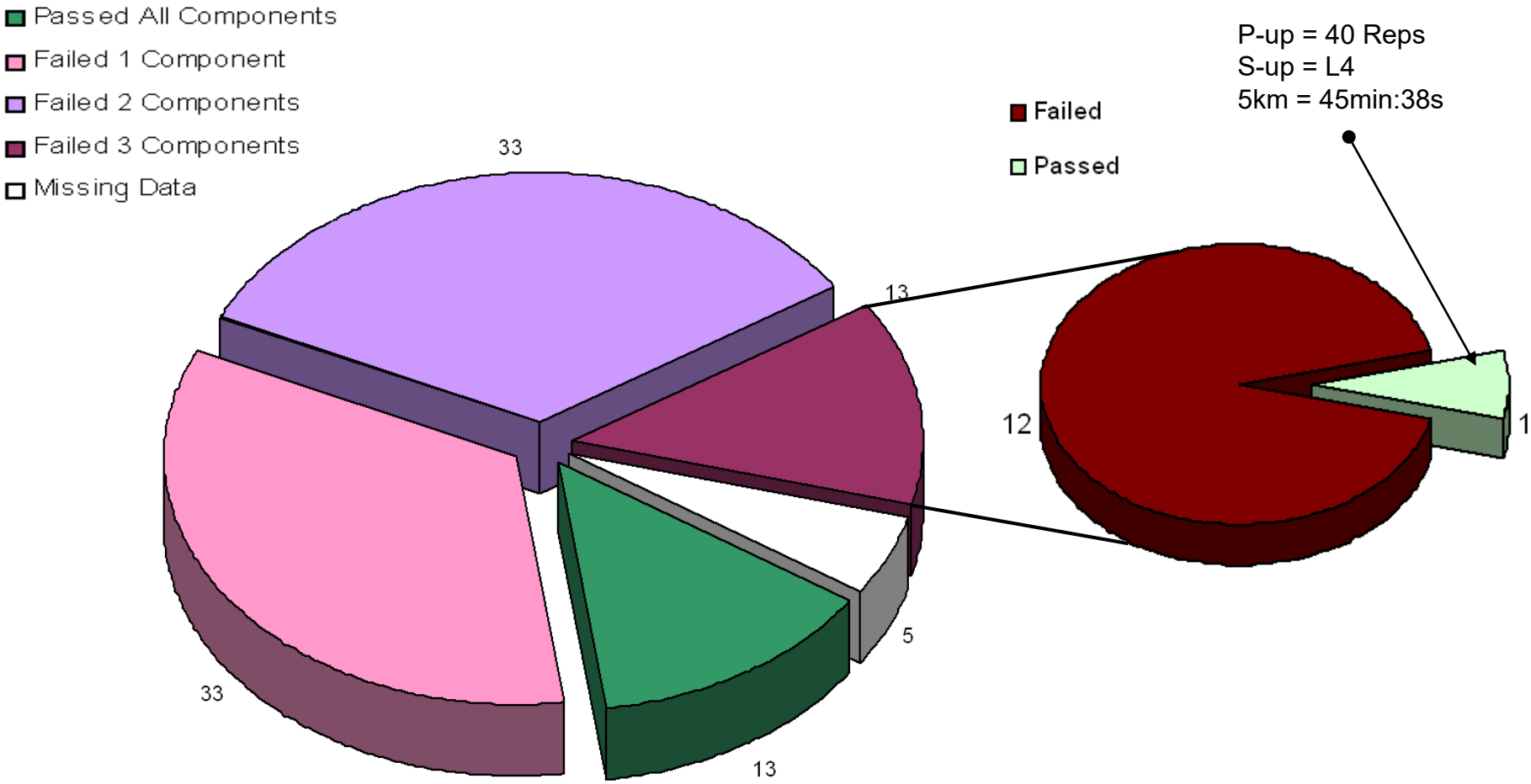
- Results / Discussion:

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?



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- Discussion:

Proposed SFET Standards Adjusted

- Push Ups : 66 reps → No Change
- 7 Stage Sit ups: Level 5 → No Change
- 5 km Pack March: 45min:30s → 45min:45s

Post Hoc Analysis of SFET results for both courses

	Actual Course Cohort			Predicted Course Cohort Following Implementation Of SFET Standards				
	Cohort Size	PASS	FAIL	Cohort Size Post Screening	PASS	FAIL	False Negative	Increase in Pass Ratios
SAS SC	92	21 (23%)	71 (77%)	80	21 (26%)	58 (73%)	0	13%
CSTC	104	39 (38%)	65 (63%)	85	39 (46%)	46 (54%)	0	21%

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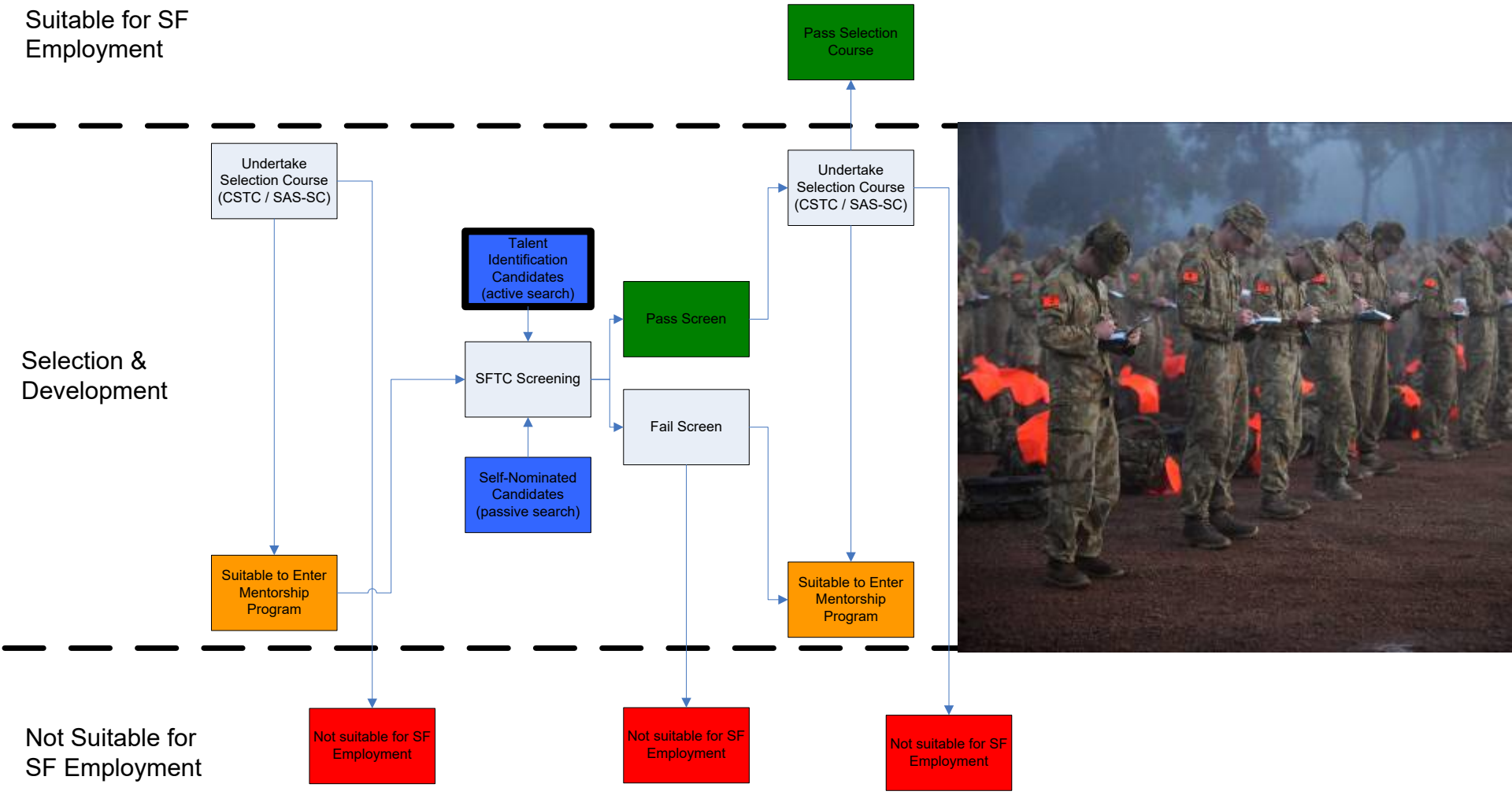
- Discussion:



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