

Shirley Jorgensen, Catherine Fichten, Alice Havel
Office of Institutional Research, Adaptech Office, Services for Students with Disabilities
Dawson College, Montreal Quebec

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Academic Success Graduates With and Without Disabilities

Relationship Between Perceptions of Difficulty and University Entrance Scores

- A Comparative Study of Graduates With and Without Disabilities



Quebec – College System

■ Cegep (DEC)

- Pre-university studies (2 years)*
- Career programs (3 years)*
- Attestations
- Independent studies
- Non-credit courses
- Enrolls 150,000 students per year in credit programs



Objectives of the Study

- Is there a correlation between the CRC's of graduates and their perceptions of the difficulties they experienced during their studies?



Exit CRC Score (University Entrance Criteria)

C R C

- Main output variable
- Cote de rendement au collégial (CRC)
- Weighted grade average
- Theoretical Range (1 – 50)

Method



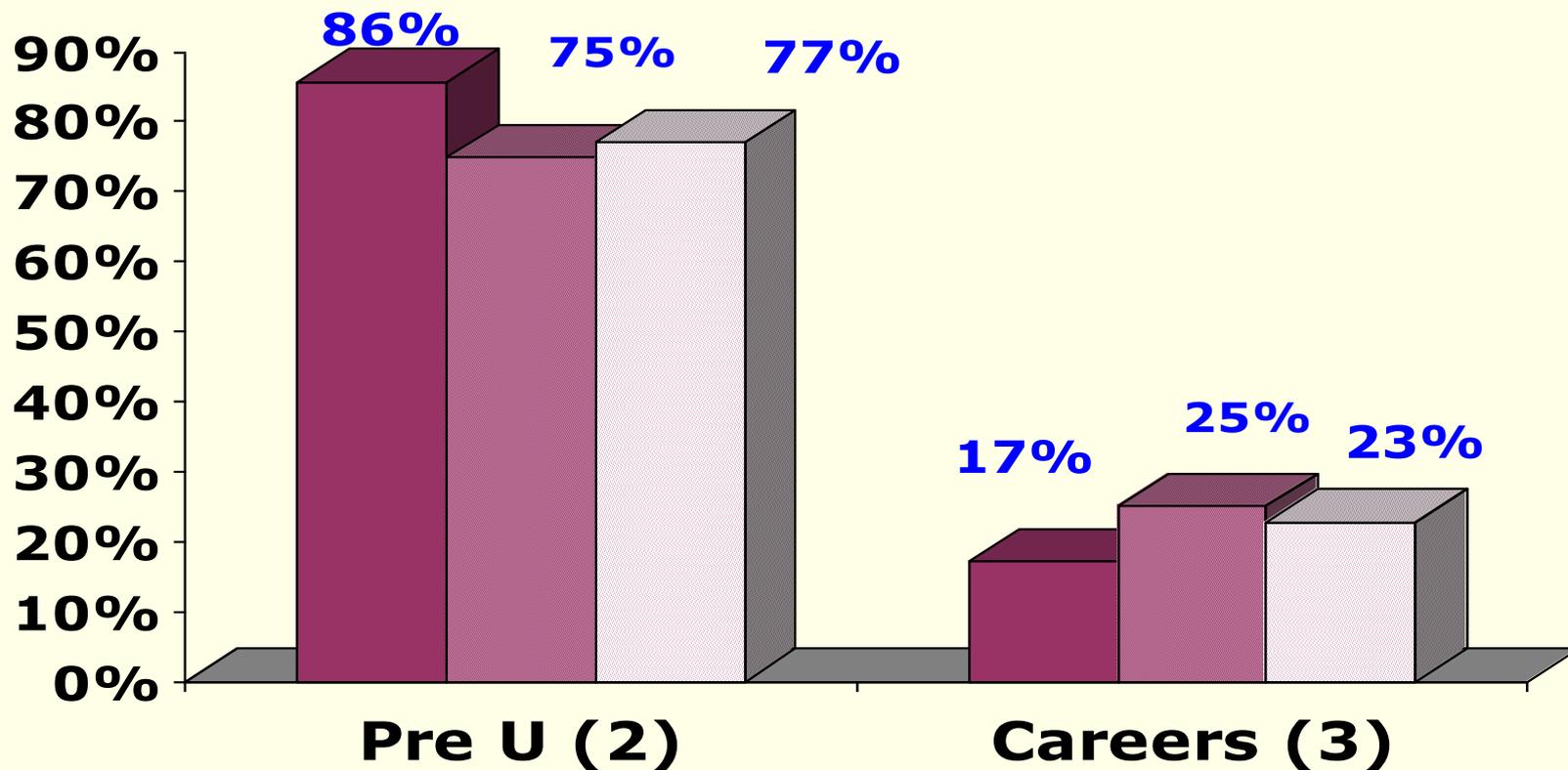
- All graduates who completed a diploma 2004 – 2005 were sent the Course Experience Questionnaire (CEQ) 6 - 10 Months following graduation
- Two mail-outs were done
- Response rate was 29% - 30%

Sample Size



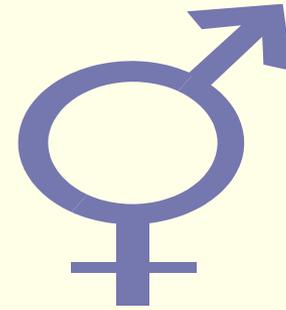
Disability Status	Responded to survey
Registered With Disabilities	30
Not Registered With Disabilities (Self-Reports)	74
Without Disabilities	966
Total Sample (With Disabilities)	1070 (104)

Sector of Enrolment



■ LD/ADD ■ Other Disabilities ■ No Disabilities

Sample Characteristics



	Females	Males
Registered	59.6%	40.4%
Not Registered	61.4%	38.6%
No Disability	62.5%	37.5%

Disability Type



Disability Group	N
With disabilities LD/ADD	29
Other Disabilities	75
Without Disabilities	966
Total	1070
Total With Disabilities	104

Course Experience Questionnaire (CEQ)

- Is there a correlation between graduate CRC scores and their perceptions of difficulties experienced during their studies?



- Disability Group

- **Registered vs Unregistered**

- **LD/ADD, Other Disabilities, No Disabilities**

CEQ Scale – 6 point scale

- 1 Much harder
- 2 Moderately harder
- 3 Slightly harder
- 4 Slightly easier
- 5 Moderately easier
- 6 Much easier

29 items -



Course Experience – CEQ

Personal

- Financial Situation
- Paid Employment
- Family
- Friends
- Level of Personal Motivation
- Study Habits
- Previous Educational Experience
- Health



Cegep Related

■ Courses

- Level of course difficulty
- Number of courses taken

■ Attitudes

- Professors
- Non-teaching staff
- Fellow students
- Willingness of professors to adapt courses to my needs

■ Availability

- Computers on campus
- Course materials
- Financial aid
- Disability related services**



Cegep con't

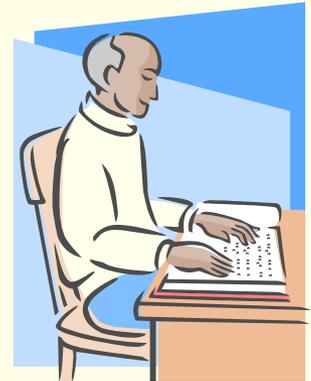
■ Accessibility

- Classrooms/Labs
- Physical Education Courses
- Extracurricular Activities
- Private tutoring
- Public transport
- Computers off-campus



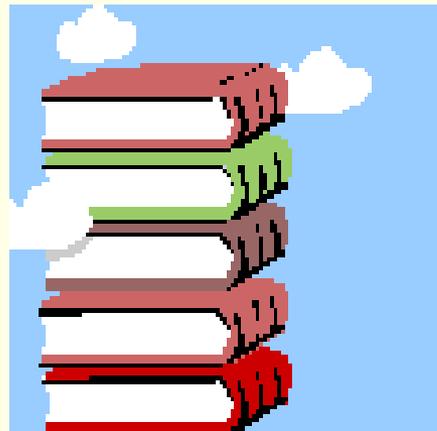
CEQ - Disability Specific

- Impact of disability
- Adaptive transport
- Physical adaptations at home
- Scheduling conflicts between disability related services
- Disability related services off-campus

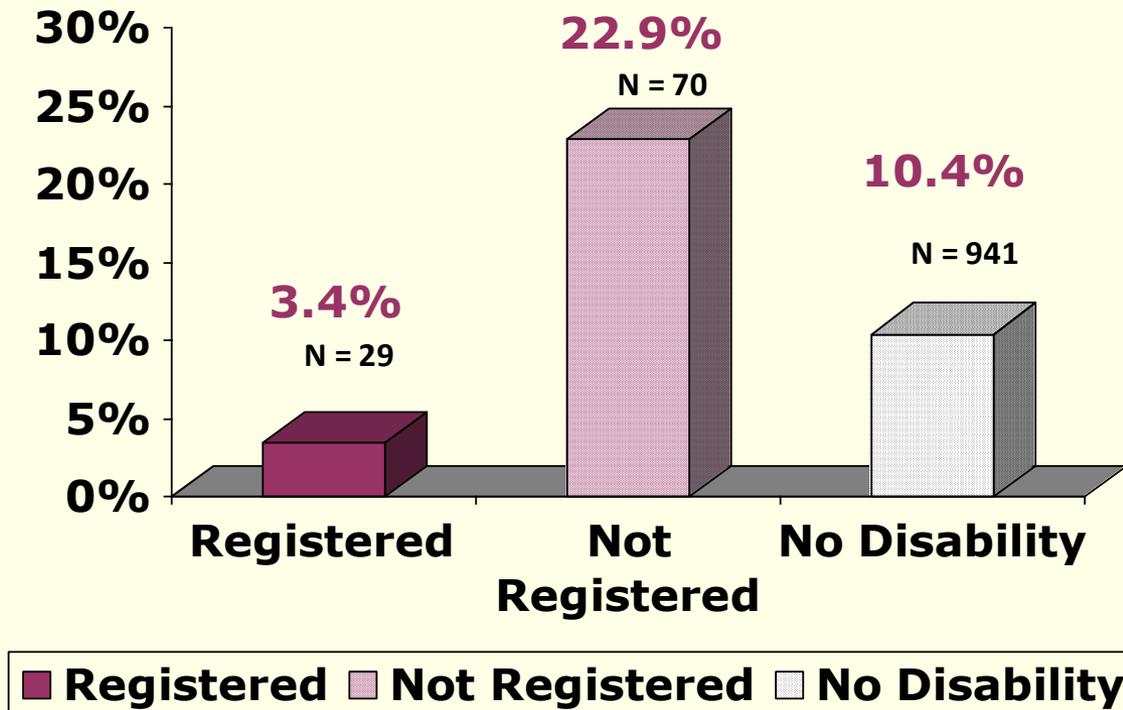


CEQ – Index of Difficulty (IDF)

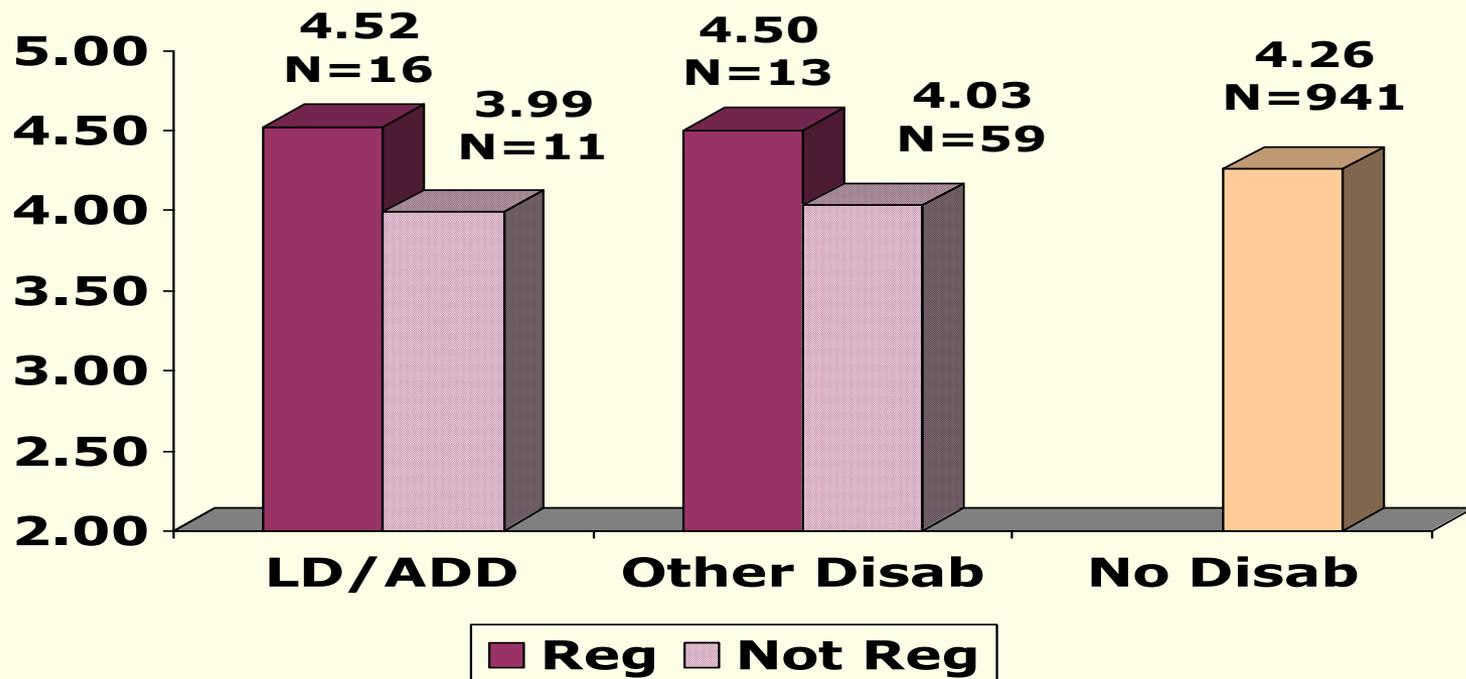
Index of difficulty calculated from 19 items
– excluding disability specific items and
off-campus items



Proportion IDF - 3.5 or Lower



Index Of Difficulty - Reg vs Unreg



Items Showing Correlation to CRC (N = 642 – 1039) – All Graduates	N	Correl
Study Habits***	1039	.276
Level of Personal Motivation***	1036	.229
Availability Computers Off-Campus	642	.193
Previous Educational Experience	1036	.173
Attitudes of Professors	1032	.163
Financial Situation	872	.145
Family	942	.136
Level of difficulty of courses	1022	.106
Willingness of professors to adapt..	894	.068

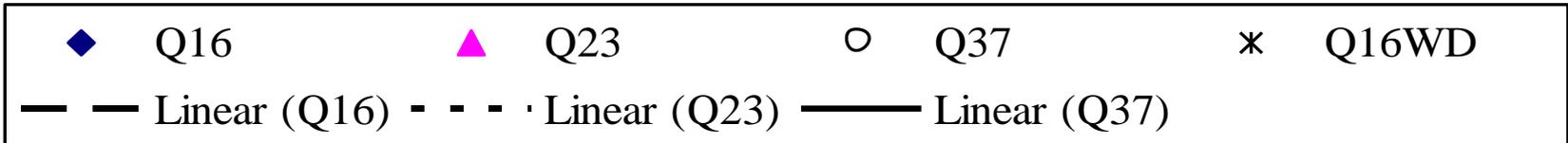
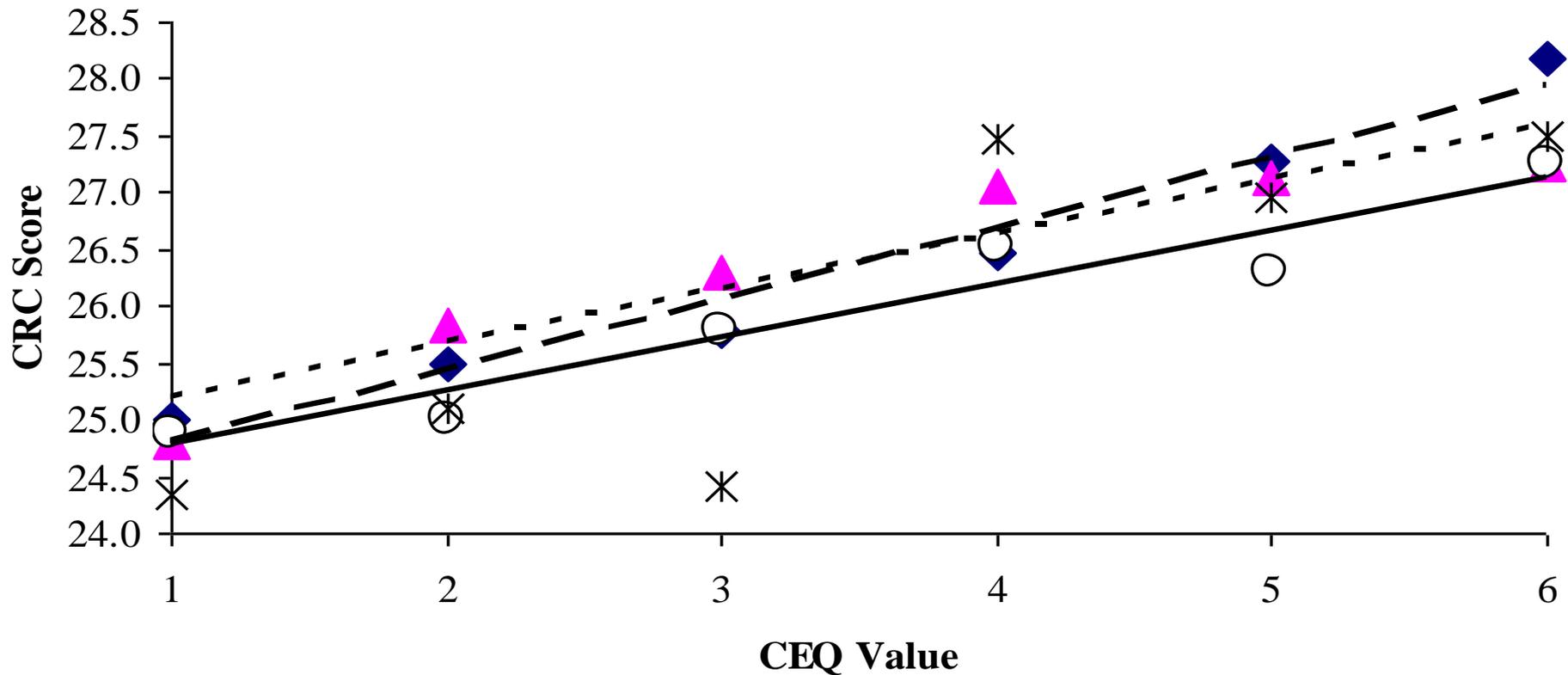
*** Also correlated for graduates with disabilities

Graduates with Disabilities

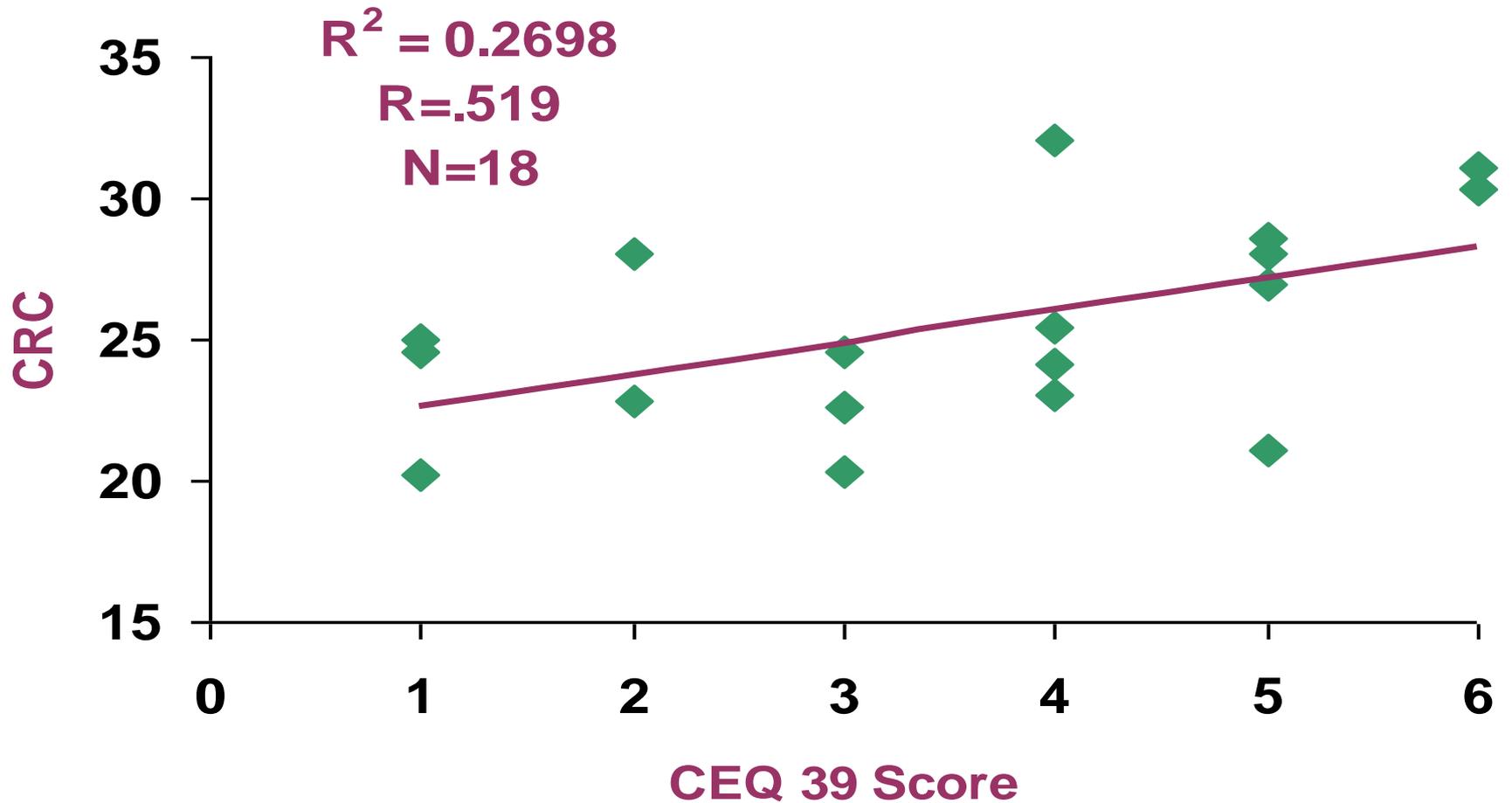
Items Correlated With CRC N = 24 - 97	N	Corr
Disability Support Services Off Campus	18	.519
Study Habits***	98	.296
Level of Personal Motivation***	97	.229

***** Also correlated for all graduates - and values of the coefficients were similar**

CEQ Scale Score vs CRC



Availability of Disability Related Services Off-Campus



Key Findings

- **9 CEQ variables showed a positive correlation with the CRC**
- **Study habits and level of personal motivation showed the highest correlations for both graduates with and without disabilities ($r = 0.2$ to 0.3)**
- **Availability of disability services off-campus was an important consideration for a subgroup of students with disabilities**

All Graduates

- When the 9 variables were entered into a stepwise regression model only 3 variables were entered – study habits, attitudes of professors & availability of computers off-campus
- $R = .350$ and these accounted for 11%-12% of variability in CRC

Graduates with Disabilities

- When the 9 variables were entered into a stepwise regression model only – **study habits** was entered
- $R = .295$ and these accounted for **7% to 9%** of variability in CRC

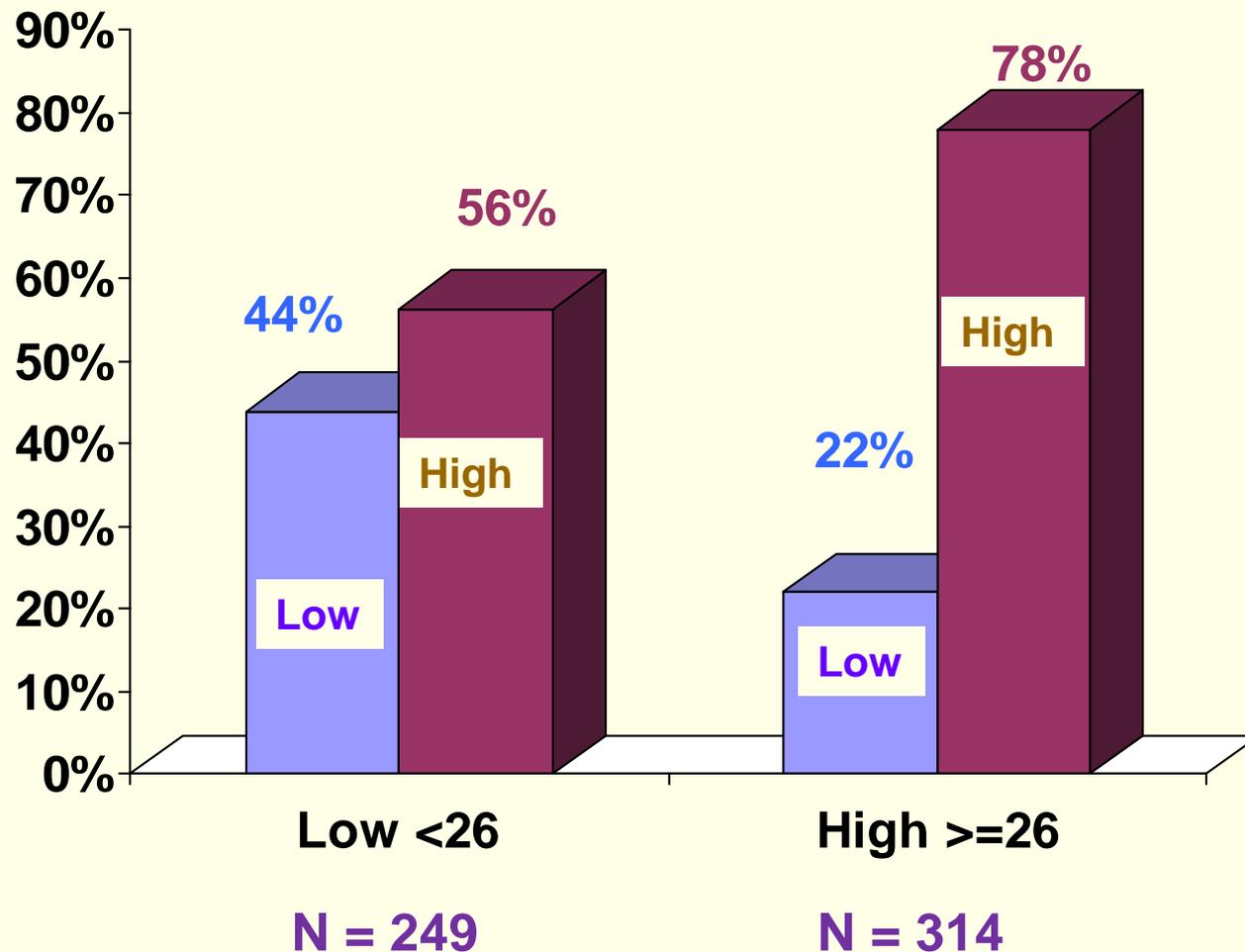
Predictive Value of Variables

How well did the variables predict whether a graduate obtained a CRC above or below 26?

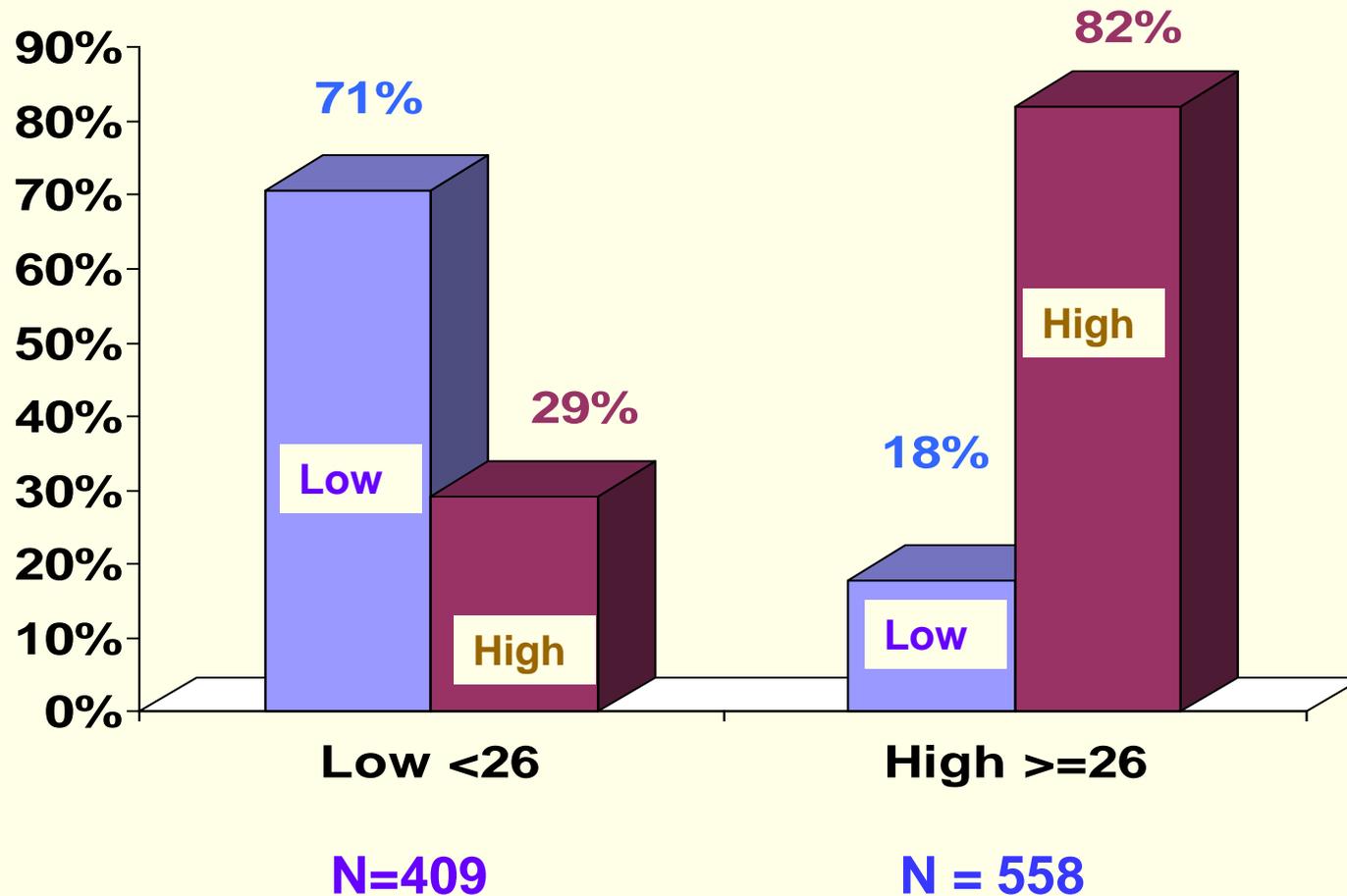


Classification of Cases Using CEQ Variables All Graduates

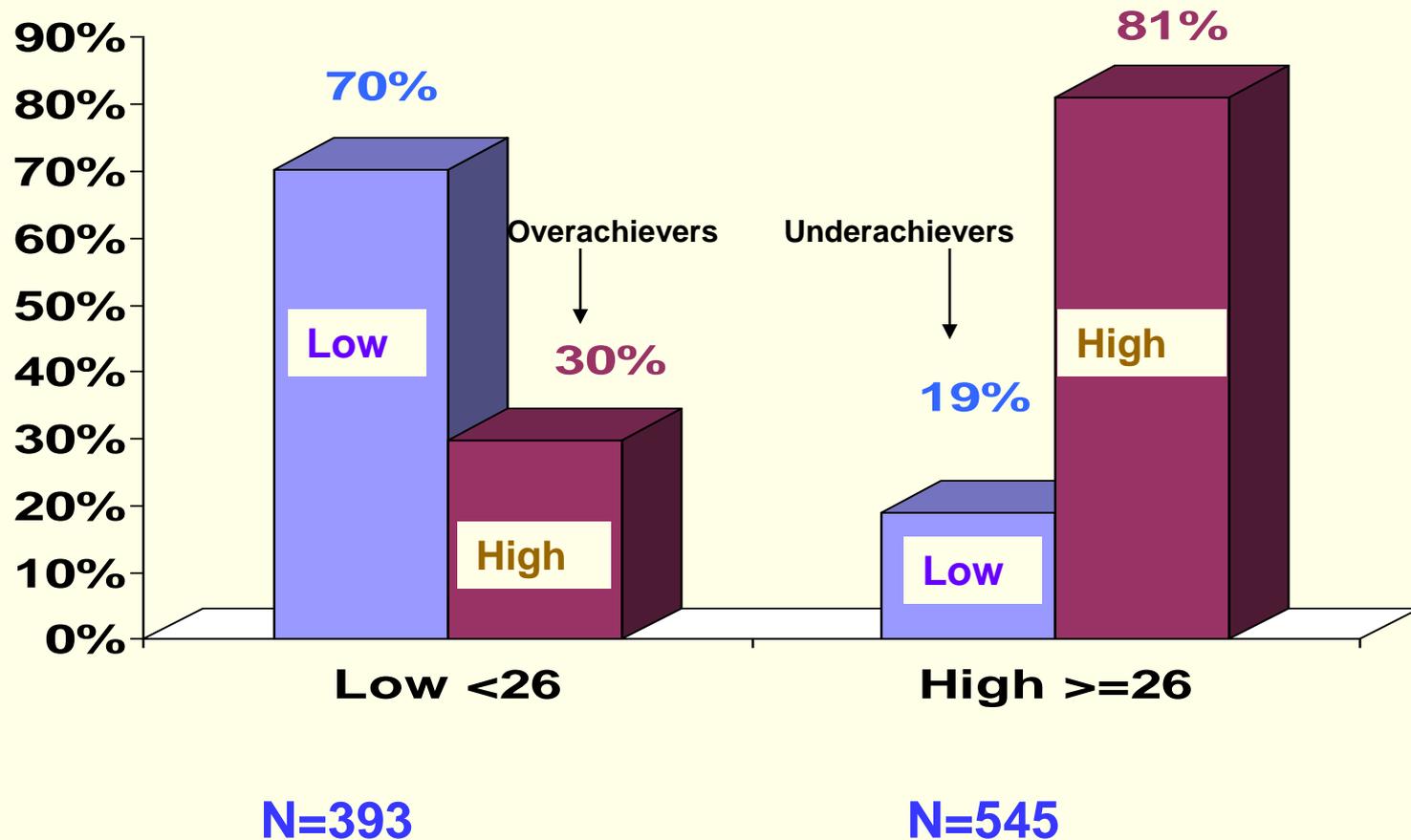
(Scenario 1) Study Skills, Computers Off-campus
& Attitudes of Professors Entered (N=563)

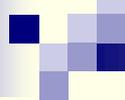


Scenario 2 – Classification of Cases High School Grades Alone (N = 967) All Graduates



Scenario 3 – 4 CEQ Variables and High School Grades
Study habits, Attitudes of Professors, Computers Off-Campus
Failed Entry Criteria
Sec V & Personal Motivation were entered (N = 938)





Over and Underachievement

- Underachievers

- Lower Scores - Level of Motivation, Computers-Off Campus, Financial Situation
- Higher Scores - Accessibility of Classrooms/Labs

- Overachievers

- Higher Scores - Private tutoring

Graduates With Disabilities

Obstacles (lowest scores)	Facilitators (highest scores)
Impact of disability (2.68)	Public Transport (4.87) #
Number of courses taken (3.32) #	Availability of disability related services on campus (4.86)
Level of difficulty/courses (3.52) #	Availability of computers off-campus (4.82) #
Paid employment (3.55) #	Physical adaptations at home (4.80)
Computer technologies training off campus (3.55) #	Private Tutoring (4.68)
Scheduling conflicts disability services (3.55)	Previous educational experience (4.65)
Disability support services off-campus (3.56) **	Accessibility of classrooms labs (4.64) #
Financial Situation (3.80) #	** Also Correlated with CRC # Common to Grads Without Disabilities

Graduates Without Disabilities

Obstacles (lowest scores)	Facilitators (highest scores)
Number of courses taken (3.32) # **	Health (4.92)
Level of difficulty of courses (3.68) # **	Public transport (4.87) #
Paid Employment (3.55) #	Availability of computers on campus (4.84)
Financial Situation (3.76) # **	Accessibility of classrooms/ labs (4.68) #
Computer technologies training off - campus (3.84) #	Availability of computers off-campus (4.68) # **

**** Also correlated with the CRC score**

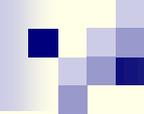
Common to graduates without disabilities

Summary

- **Graduates who registered for disability services perceived their college experience as easier**
- **There is a correlation with the college exit grade and perceptions of difficulty**
- **Study habits and level of personal motivation had the highest correlations with college exit grades**
- **Level of motivation was important for graduates with disabilities – 7% of variability**

Con't

- Availability of disability related services off-campus was important for a sub-group of students with disabilities
- The high school grade was the best predictor of whether a graduate had a college exit score above or below 26
- Aspects of college experience that were most difficult/easy for graduates with disabilities were also perceived as the most difficult/easy for graduates without disabilities



Implications for Practice

- Showcase benefits of registering for disability services
- Study habits – support students in their efforts to improve their study habits
- Raise awareness of disability services off-campus
- Teacher awareness of needs of students with disabilities
- Development of self-advocacy skills for students with disabilities to obtain the supports they need



Full copy of research paper can be obtained and downloaded from the Adaptech website

<http://adaptech.dawsoncollege.qc.ca/>

Sample Size



Disability Status	Responded to at least one survey	Did not respond to any survey	Total
Registered With Disabilities	77	198	275
Not Registered With Disabilities (Self-Reports)	145	unknown	145
Without Disabilities	2959	6027	8986
Total Sample (With Disabilities)	3181 (222)	6225 (198)	9406 (420)

Graduates with Disabilities

- **Registered** – Registered with the disability service provider
- **Unregistered** – Did not register with the service provider - but self-reported their disability on a survey



Scenario 3 – 4 CEQ Variables and High School Grades
Study habits, Attitudes of Professors, Computers Off-Campus
Failed Entry Criteria
Sec V & Personal Motivation were entered

N = 938		Low < 26	High >= 26	Total	
Count	Low	276	117	393	
	High	103	442	545	
Percent	Low	70.2%	29.8%	100%	
	High	18.9%	81.1%	100%	76.5%

Scenario 1 CEQ Variables (Motivation, Study habits, Attitudes Professors , Computers Off-Campus) N = 563

		Low < 26	High ≥ 26	Total	
Count	Low	109	140	249	
	High	69	245	314	
Percent	Low	43.8%	56.2%	100%	
	High	22.0%	78.0%	100%	62.9%

Scenario 2 – High School Grades Alone (N = 967)

		Low < 26	High ≥ 26	Total	
Count	Low	289	120	409	
	High	100	458	558	
Percent	Low	70.7%	29.3%	100%	
	High	17.9%	82.1%	100%	77.2%

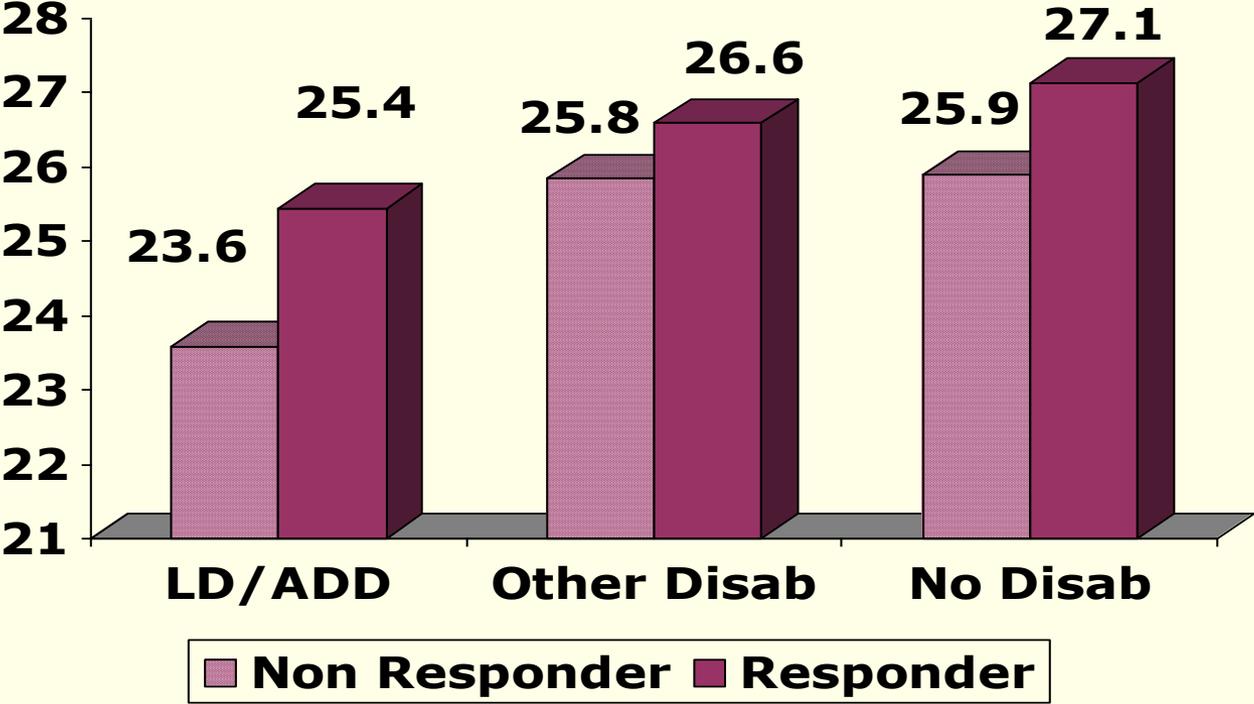
Part 1

- Are university entrance scores of graduates with disabilities competitive??
 - **Registered vs Unregistered**
 - **Disability Type (LD/ADD vs Other)**
 - **Sex**

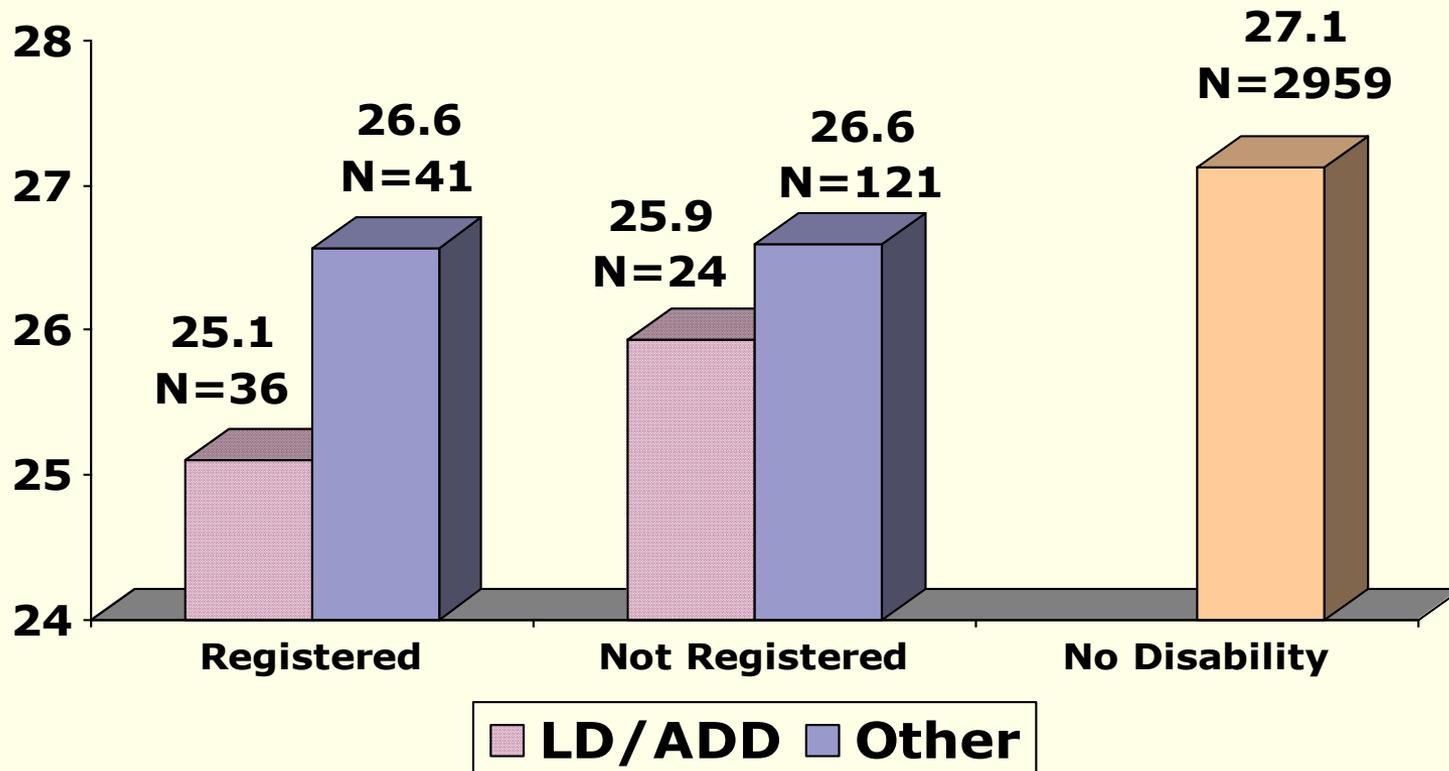
Hypotheses

- Graduates with disabilities who register for services – have CRC's that are equivalent to those of graduates without disabilities and higher than those of unregistered graduates
- Graduates with LD/ADD have lower CRC's than graduates with disabilities other than LD/ADD
- Males have lower CRC scores than females regardless of the presence of a disability

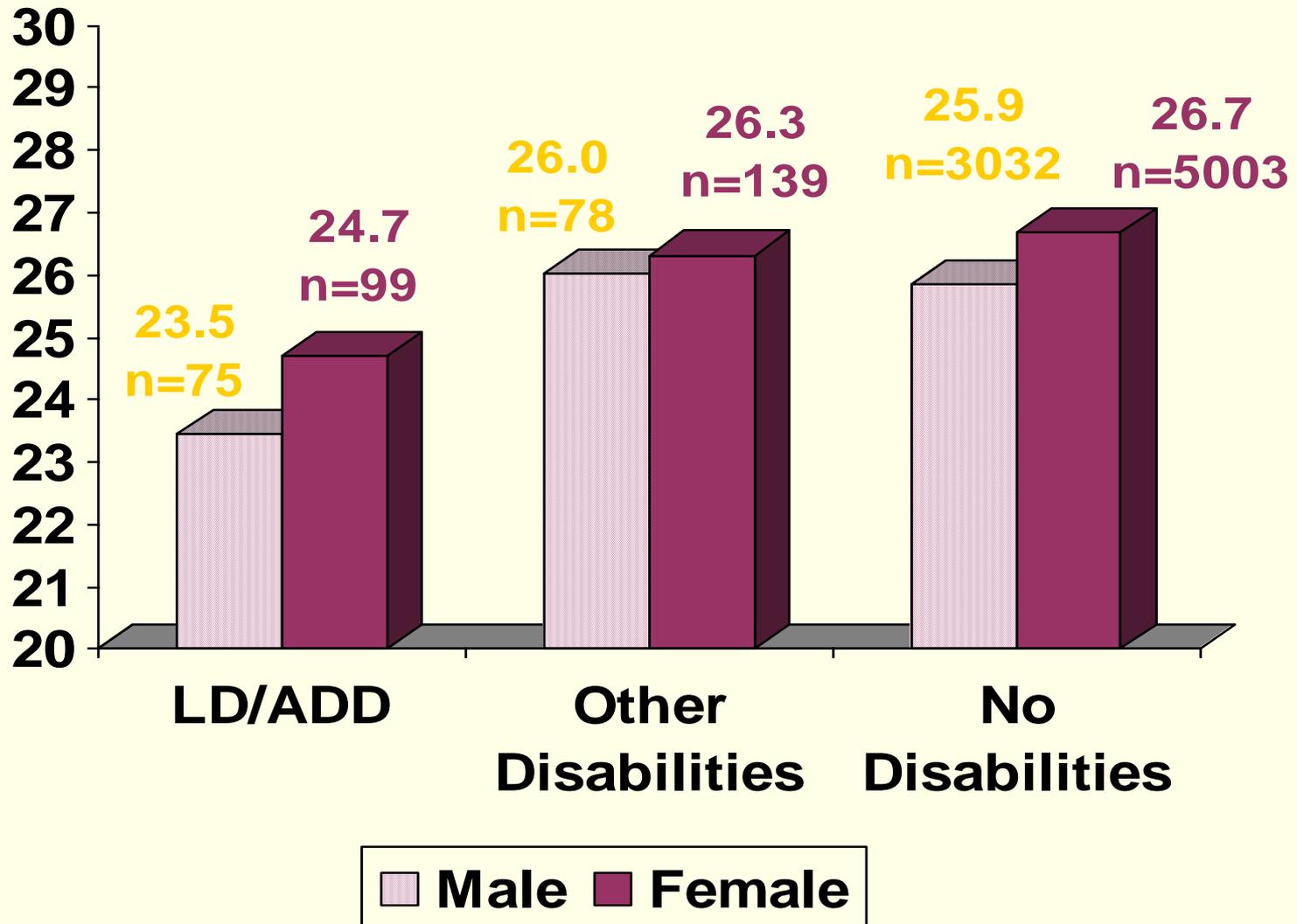
Survey Responders/Non-Responders – CRC's



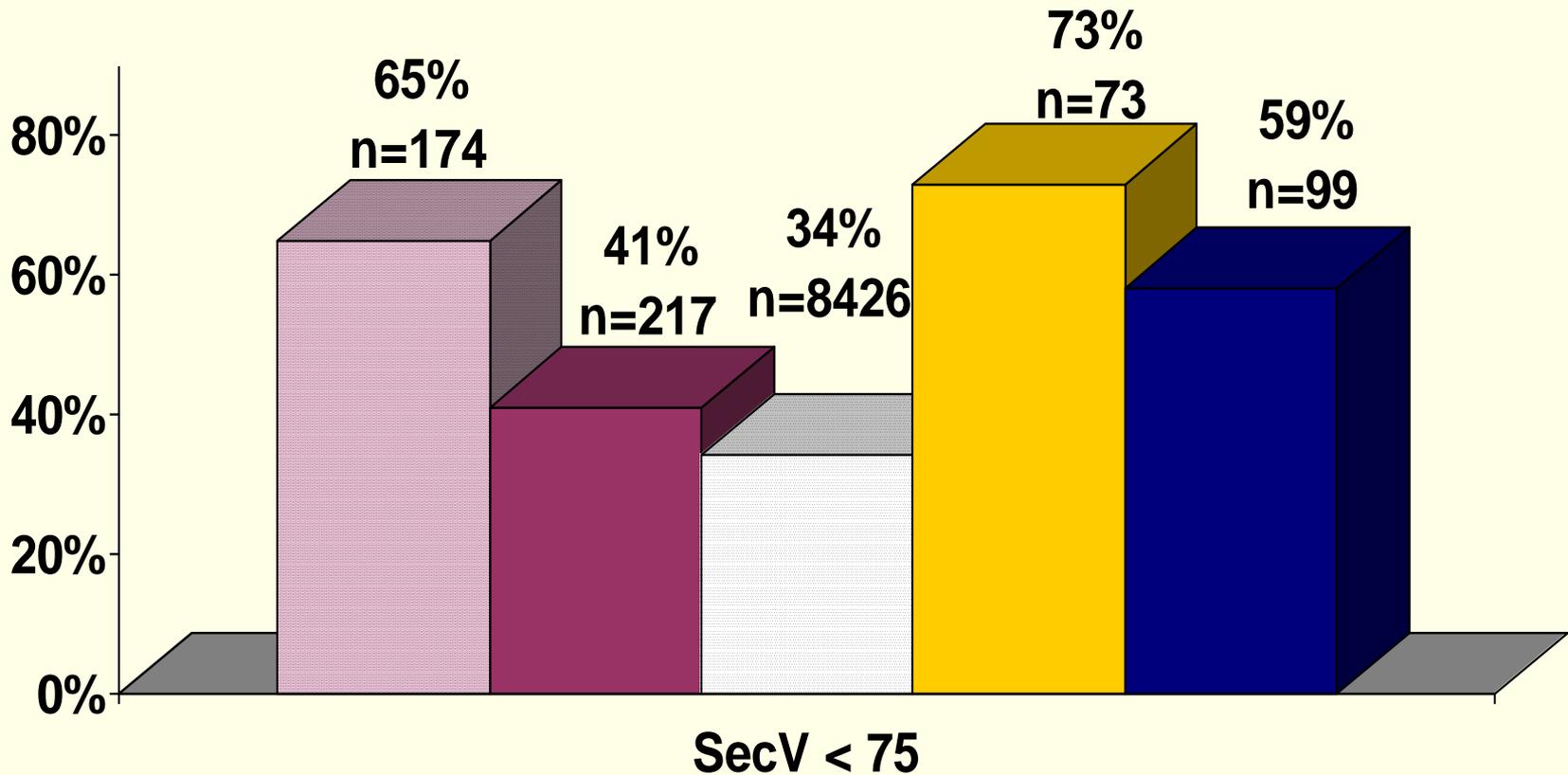
CRC Comparison Registered vs Unregistered (Survey Responders Only)



CRC Scores of Males vs Females

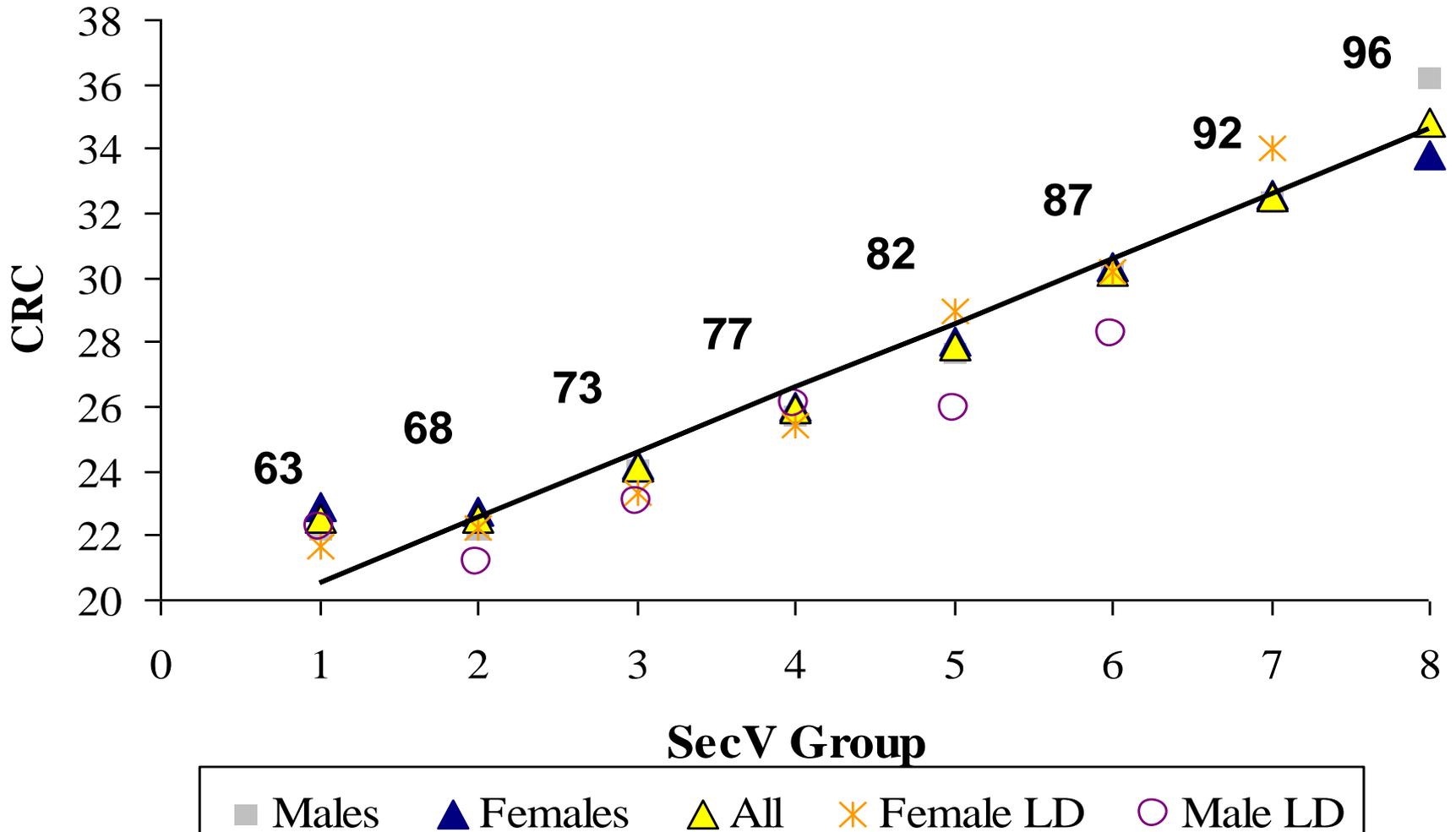


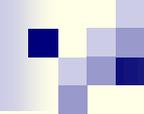
High School Grades



Legend: LDD Other No Disab M LD/ADD F LD/ADD

High School Grades & CRC





Main Findings

- Survey Responder Effect
- Disability Type
- Males vs Females
- Registered vs Not Registered

Survey Responder Effect



- **Graduates who responded to surveys tended to have higher average CRC's (and high school grades) regardless of:**
 - Whether or not they had a disability**
 - Survey to which they responded**
 - Sex**
 - Sector of Enrolment**

Registered vs Not Registered



Once the survey responder effect was taken into consideration:

- **There were no significant differences between the CRC scores of graduates with disabilities who registered, and those who did not register with the service provider.**
- **This was true for both graduates with LD/ADD and graduates with disabilities other than LD/ADD.**

Disability Type



- Graduates with LD/ADD tended to have lower CRC scores than graduates with other disabilities, and graduates without disabilities.
- No difference in the CRC between graduates with other disabilities and graduates without disabilities.

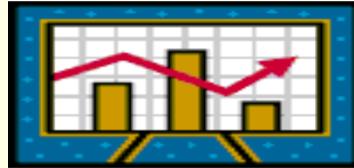
Males vs Females



- Overall, males tended to have lower CRC scores and high school averages than females.
- For equivalent high school grades, there were no differences in CRC scores between males and females without disabilities. This was also true for graduates with disabilities, other than LD/ADD.
- However, males with LD/ADD tended to obtain lower CRC scores than other graduates with equivalent high school grades.

Males vs Females – High School Grades

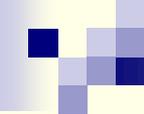
- A larger proportion of male graduates (40%) had high school grades that were in the lower end of the range (<75) compared female graduates (31%).



- The proportion of graduates with LD/ADD with high school averages below 75 (65%), was higher than graduates without disabilities (34%) and graduates with other disabilities (41%).
Male grads with LD/ADD: (73%).

Relevance

- A graduate with a high school average below 75 is likely to achieve a CRC of 24 or lower
- The average CRC score for graduates who gain admission to the main university to which graduates apply is 26
- 58% of female and 73% of male graduates with LD/ADD have Secondary V averages below 75 and on average will achieve an entrance score of 24
- Less competitive scores for LD/ADD graduates



Relevance

Sampling for Research Studies on Disabilities

- Identifying students with disabilities from self-reports can produce different research outcomes compared to identifying students with disabilities through registration with a service provider

Graduates With Disabilities (N = 391) High School Grades Classification

