

Long-term Client Outcomes

The State-wide Gambling Therapy Service

South Australia



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inspiring achievement

Context







United Kingdom

Poland

Ukraine

Germany

France

Italy

Spain

Turkey

Kazakhstan

Mongolia

China

Japan

South Korea

Afghanistan

Iraq

Iran

Pakistan

India

Thailand

Algeria

Libya

Egypt

Saudi Arabia

Mali

Niger

Sudan

Chad

Nigeria

Ethiopia

Kenya

DR Congo

Tanzania

Angola

Namibia

Botswana

Madagascar

South Africa

Indian Ocean

Indonesia

Papua New Guinea

Australia

New Zealand

South Atlantic Ocean



Mongolia

China

South Korea

Japan

Thailand

Indonesia

Papua New
Guinea

Australia

New
Zealand

North
Pacific
Ocean

United States

Mexico

Colo

Pe

South
Pacific
Ocean

Overview

1. Statewide Gambling Therapy Service, SA

- context
- service model
- routine activity, KPIs and outcomes
- ongoing research programmes

2. examples of some specific study outcomes

3. larger service evaluation outcomes

Context

- the problem with gambling
 - forms of gambling (85% of clients present with EGM problems)
 - rate of help seeking (2-5)% of at risk group
 - emerging forms of gambling
- prevalence: 2% of the population with gambling problems
- co-occurring conditions
- varied progress through treatment (sessions, timeframe, stop/start approach)

National problem gambling context

- **395,000** Australians are either at risk of developing problems or have serious gambling problems
- **200,000** machines in Australia in **6,000** venues
- ease of access increases problems (EGMs)

Productivity Commission Inquiry Report, 2010

Business structure

- funded through the Department for Communities and Social Inclusion in South Australia
- Office for Problem Gambling (gamblers rehabilitation fund - GRF)
- SGTS funded to treat 400 clients per year
- CBT based therapy...
 - manual-based graded exposure treatment & CBT
 - therapists with backgrounds in mental health nursing, social worker and psychology with post-grad training in CBT

- service sites
- treatment timeframe - (8-12) sessions
- inpatient and outpatient options
- recurrent clients (repeated treatment episodes or cycles)
- client profiles



- different approaches to remediation by help service providers (treatment continuum)
 - family counselling
 - financial counselling and support
 - therapy (outpatient and in-patient)
 - treatment for comorbid mental health conditions

Research Activities

- 3 year ethics protocol: tracking & follow-up
- relapse study
 - relapse models
 - predictors of relapse in PG
 - cohort study (mainly SGTS clients)
- naltrexone pilot study
- inpatient review project
- pre-release prison pilot project

Research Activities

- testing the service provision model to develop an evidence-based best practice service
- RCT (3 year study of CT/BT)
- emergency department admissions
- family violence and problematic gambling (Hong Kong)
- Flinders Centre for Gambling Research
- RCT (NH&MRC 2013: CT/BT/CBT/TAU)

Service Summary

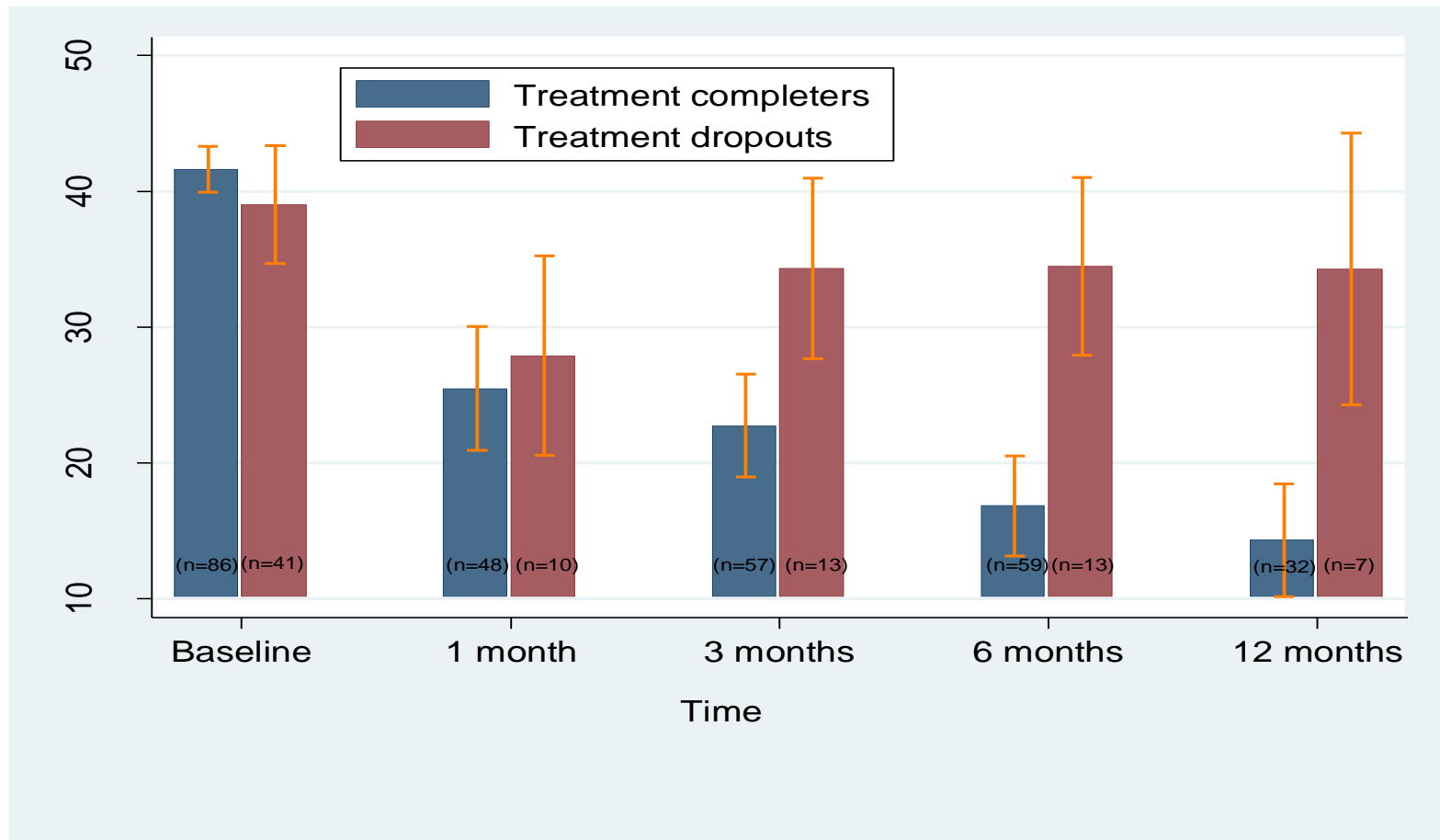
for data from 2011-12

Of the 752 clients that were seen by SGTS in 2011-12

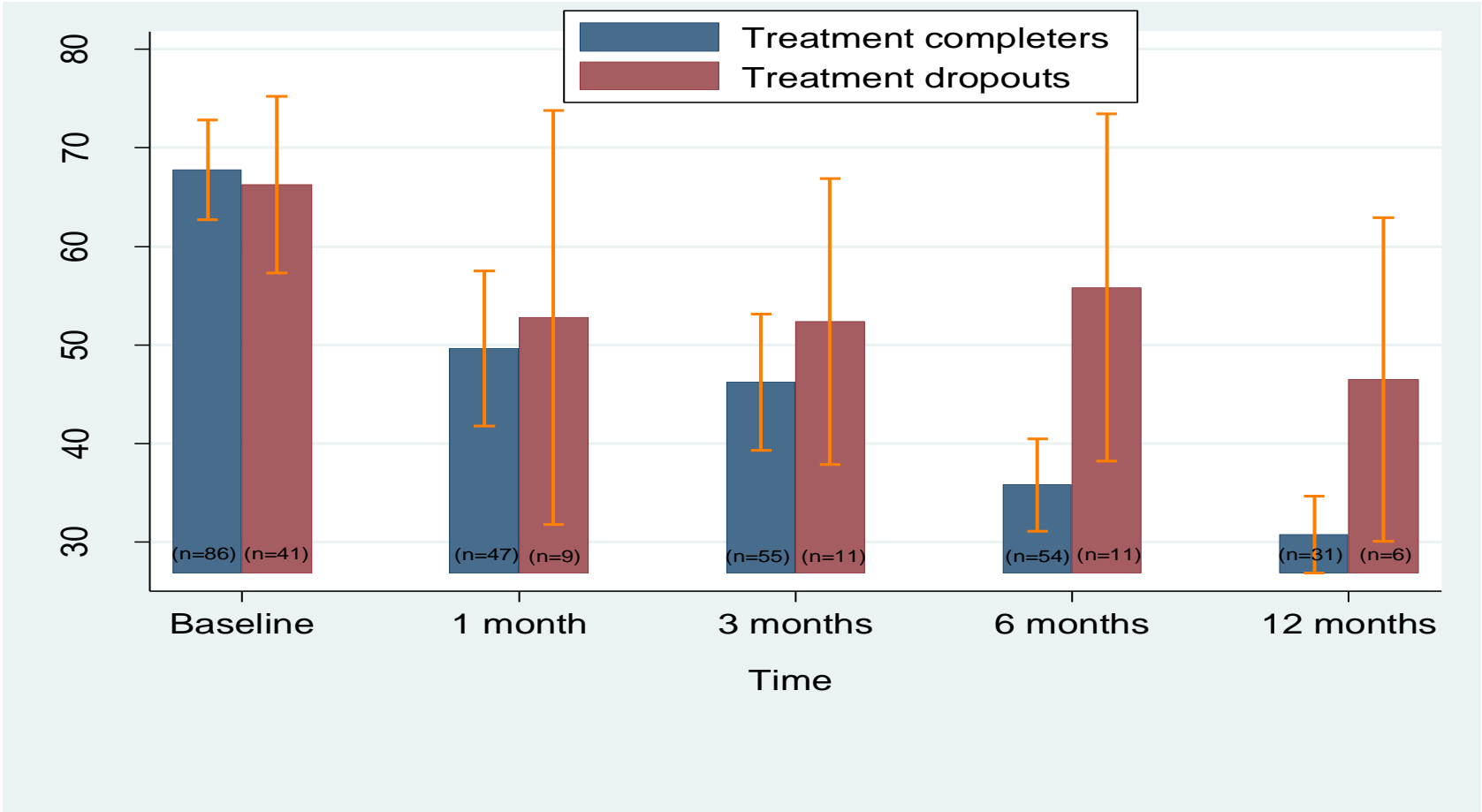
- 406 (54%) were new contacts
- 81 (11%) were non-gambling support clients
- 114 (15%) were continuing in treatment from the previous year
- 151 (20%) were continuing in follow-up from the previous years

Outcomes for a cohort study – predictors of relapse ($n = 127$)

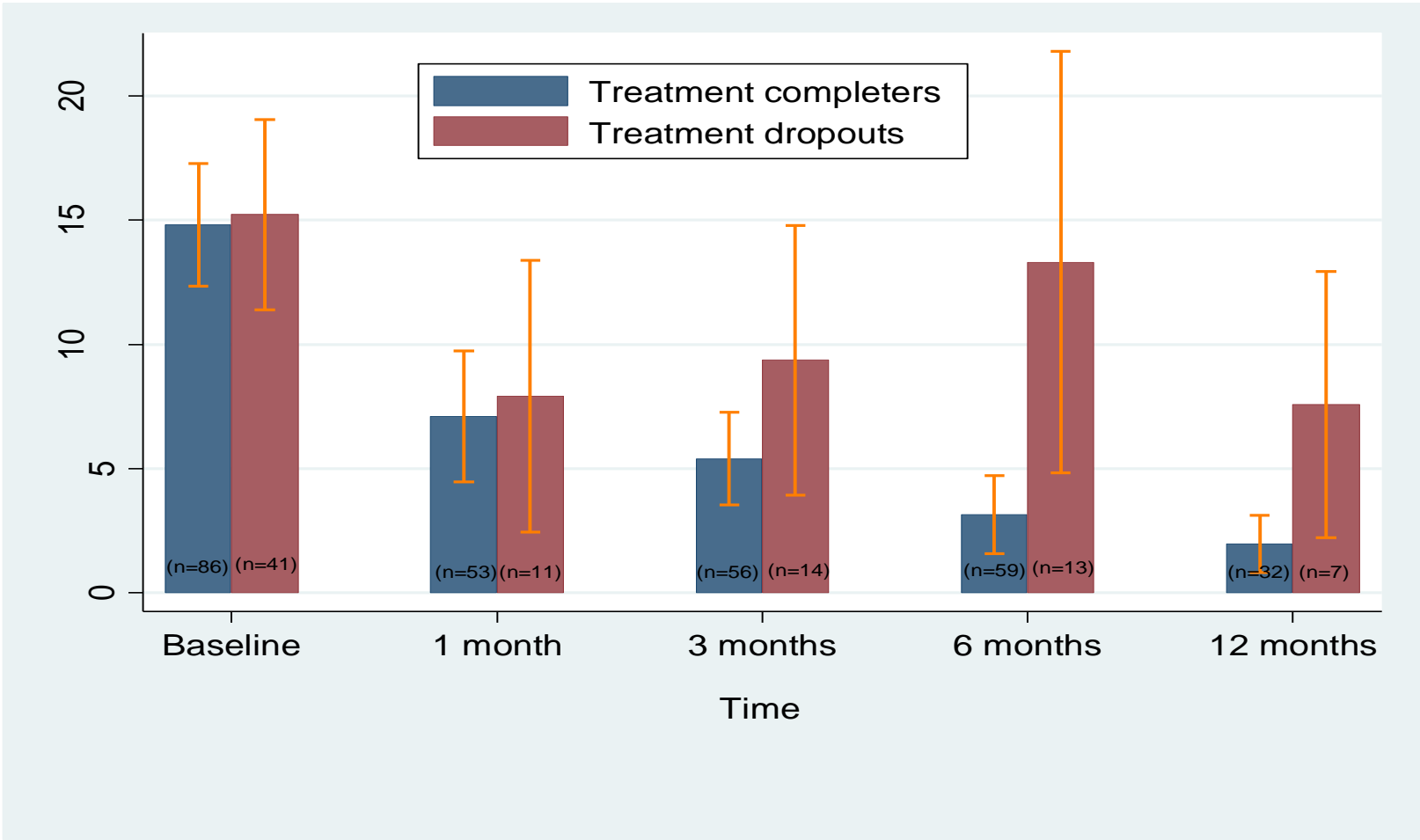
Mean self-harm Victorian Gambling Screen (VGS) Scale scores with 95% confidence intervals as a function of treatment completion status



Mean Gambling Related Cognition Scale (GRCS) scores with 95% confidence intervals as a function of treatment completion status



Mean Gambling Urge Scale (GUS) scores with 95% confidence intervals as a function of treatment completion status



Longitudinal Study Rationale

Longitudinal Study Rationale

- controlled studies are designed to test key elements of an intervention or to compare one approach to treatment with another ie CBT and general counselling
- in the day to day operation of a treatment service, client progress through treatment is haphazard, so naturalistic study designs may provide a more realistic assessment of overall service effectiveness over time
- it is important to know what actually happens to clients on their journey through treatment not just what is intended to happen or what happens to 'ideal' clients

An approach to managing gambling outcome data

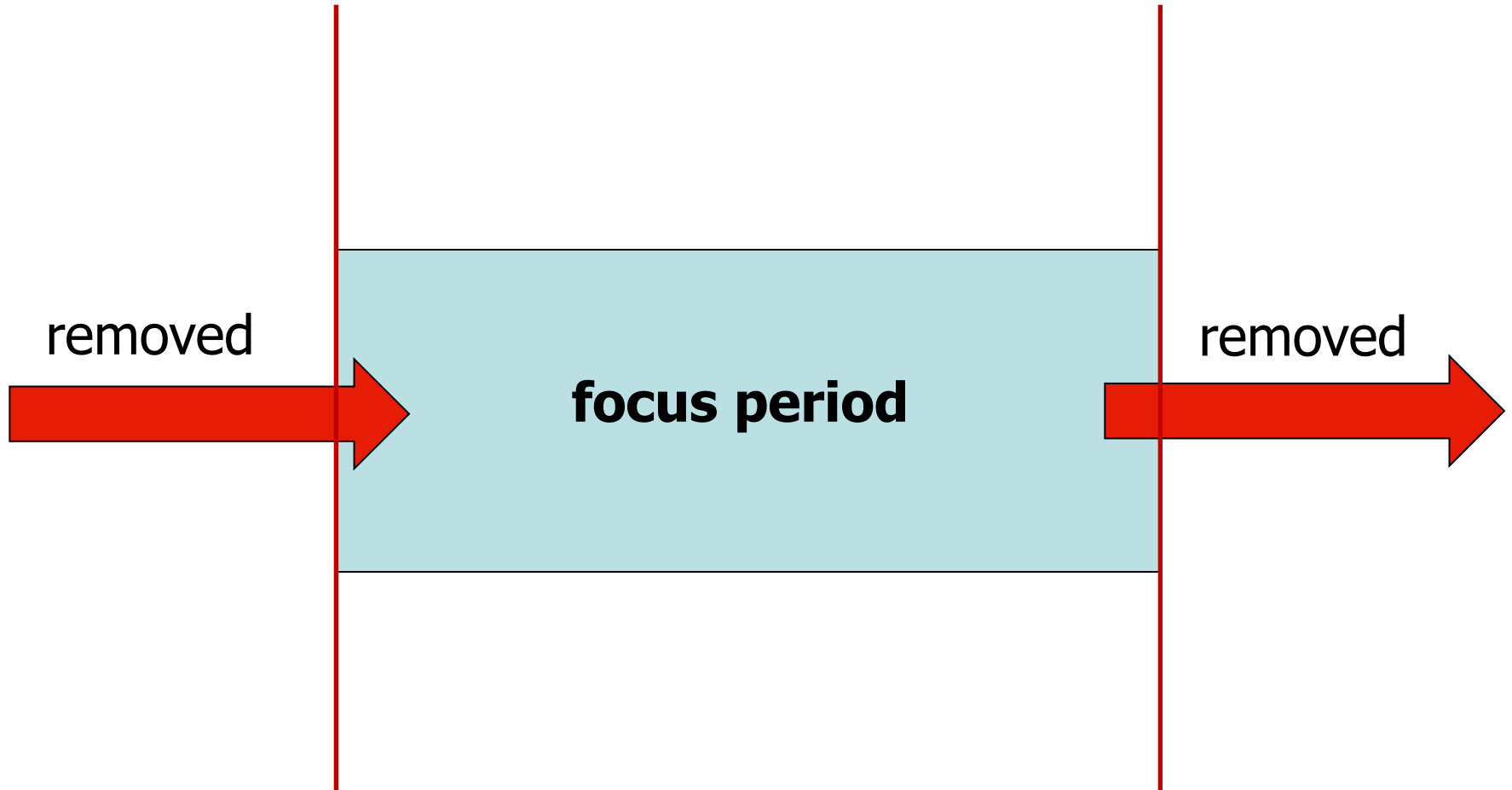
- individuals are tracked over time and changes in outcome indicators modelled using **observed and fitted estimates**
- data from the included population is analysed using time as a continuous variable
- note...ANOVA and other forms of analysis with fixed data points require **imputed** or **replaced** data otherwise cases missing time points are dropped from the analysis

Sampling service outcomes over an extended period

Context

- clients consent to 3 year follow-up when engaging in treatment
- key clinical and gambling activity data are routinely collected at baseline and every 4 sessions as well as on discharge and at 1,3,6 & 12 months with 2 & 3 year follow-up
- we focused on **VGS, K10 and WSAS** scores over time for a population of **664 unique clients** registered for treatment

inclusion



data structure

- 664 clients remained in the analysis group with baseline data in the study period and at least one other time point...ie those who began treatment within the focus period and those who had at least one repeat measure before the cut-off
- outcomes were modelled by client ID and key clinical measures, taking time as a continuous variable and using random effects modelling techniques in order to manage irregular time points and missing data (cf ANOVA and RMANOVA assumptions)

This approach accepts that:

- people may stop and re-start treatment
- other treatments may coincide with the focus treatment
- life events interfere with the treatment process
- motivation to engage may change
- therapists change
- clients accept some treatments and not others
- service provision is not laboratory controlled
- time intervals for treatment and data collection vary
- data is not always available / provided
- longer term follow-up is difficult

evaluating service treatment outcomes: a risk-adjusted model

Baseline socio-demographics and clinical characteristics of $n = 664$ problem gamblers

| Variable | Value |
|-------------------------------------|---------------|
| Socio-demographic data | |
| Age (years) | 43.02 (13.38) |
| Male | 367 (55.11) |
| Relationship | |
| married/de facto | 250 (38.17) |
| separated/divorced | 173 (26.41) |
| never married | 194 (29.62) |
| widowed | 22 (3.36) |
| other | 16 (2.44) |
| Employed | 377 (57.91) |
| Duration of gambling problem | |
| < 1 year | 79 (12.44) |
| 1 - 5 years | 202 (31.81) |
| 6 -10 years | 145 (22.83) |
| > 10 years | 209 (32.91) |
| Primary form of gambling | |
| gaming machines | 528 (80.73) |
| horse/dog racing | 86 (13.15) |
| other | 40 (6.12) |
| Outcome measures | |
| VGS | 38.89 (11.81) |
| K10 | 28.58 (9.93) |
| WSAS | 14.68 (10.12) |

Abbreviations: **VGS**, Victorian Gambling Screen harm to self sub-scale; **K10**, Kessler 10 Scale; **WSAS**, Work and Social Adjustment Scale; Data are mean (SD), or n (%) unless otherwise indicated.

modelling process

- inclusion of all important covariates
- interaction terms significant at $P \leq 0.05$ included in models
- 3 models considered
 - M1: unadjusted model (i.e. no covariates)
 - M2: adjusted for all covariates and important interaction terms (e.g. age*gender)
 - M3: M2, but where only significant interactions were included
- random-coefficient models used to account for inter-individual and intra-individual differences over time for all available data

model statistics for selecting a risk-adjustment model

| Model [†] | AIC | BIC | P-value [‡] |
|--------------------|----------|----------|----------------------|
| VGS | | | |
| 1 | 17836.89 | 17876.55 | - |
| 2 | 16681.14 | 16837.90 | < 0.001 |
| 3 | 16677.20 | 16789.17 | 0.149 |
| K10 | | | |
| 1 | 15224.78 | 15264.45 | - |
| 2 | 14200.39 | 14357.19 | < 0.001 |
| 3 | 14194.21 | 14317.41 | 0.444 |
| WSAS | | | |
| 1 | 15267.55 | 15307.21 | - |
| 2 | 14221.06 | 14377.83 | < 0.001 |
| 3 | 14214.78 | 14337.95 | 0.456 |

Abbreviations: AIC, Akaike's information criterion; BIC, Bayesian information criterion.

Model 1, unadjusted model

Model 2, all interaction terms

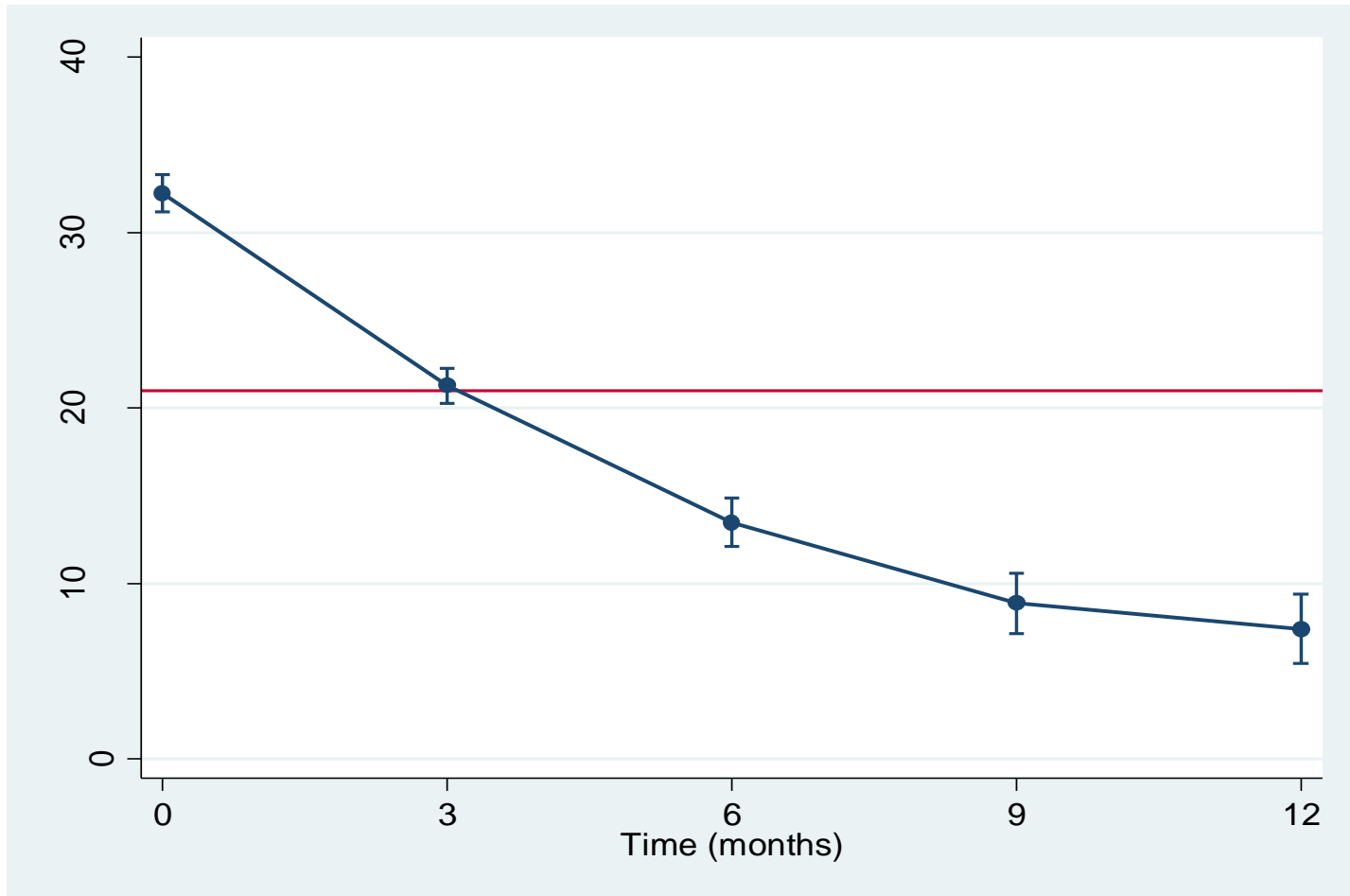
Model 3: interaction terms significant at $P \leq 0.05$ *Based on likelihood ratio tests between adjacent models

final model

- **model 3:** overall-goodness-of-fit similar to Model 2, however, less parameters make for easier interpretation
- all covariate main effects included
- significant **interaction terms** included: VGS (age*gender); K10 & WSAS (duration*time)
- **all outcomes showed a statistically significant reduction** (improvement) over time ($P < 0.001$) e.g. on average, VGS decreased by 4.81 units for each increase in time (months) when holding all other variables constant
- quadratic term for time (months²) showed a statistically significant leveling-off effect ($P < 0.001$)

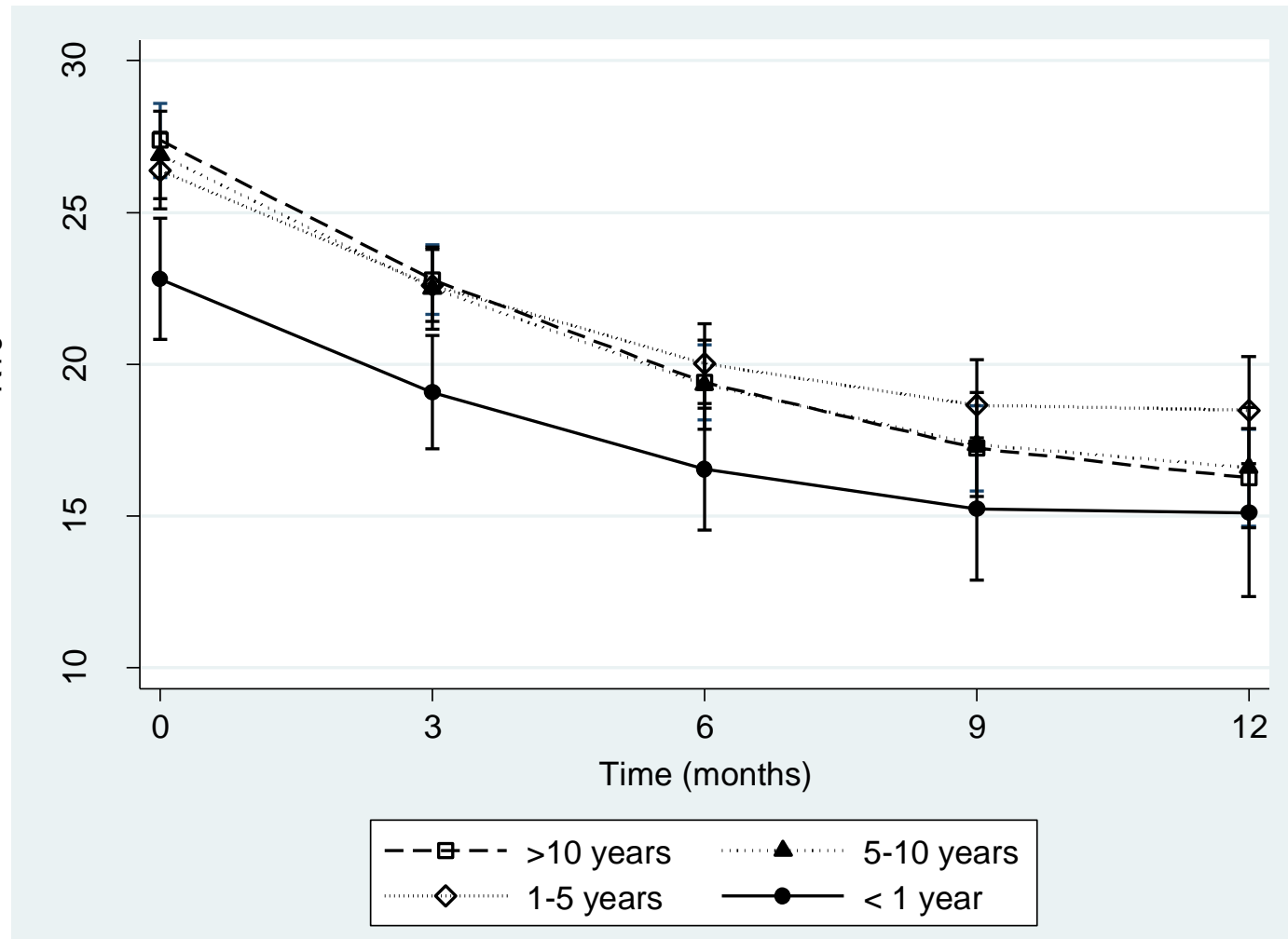
longitudinal outcomes VGS

Predictive margins of **gambling duration status** with 95% confidence intervals



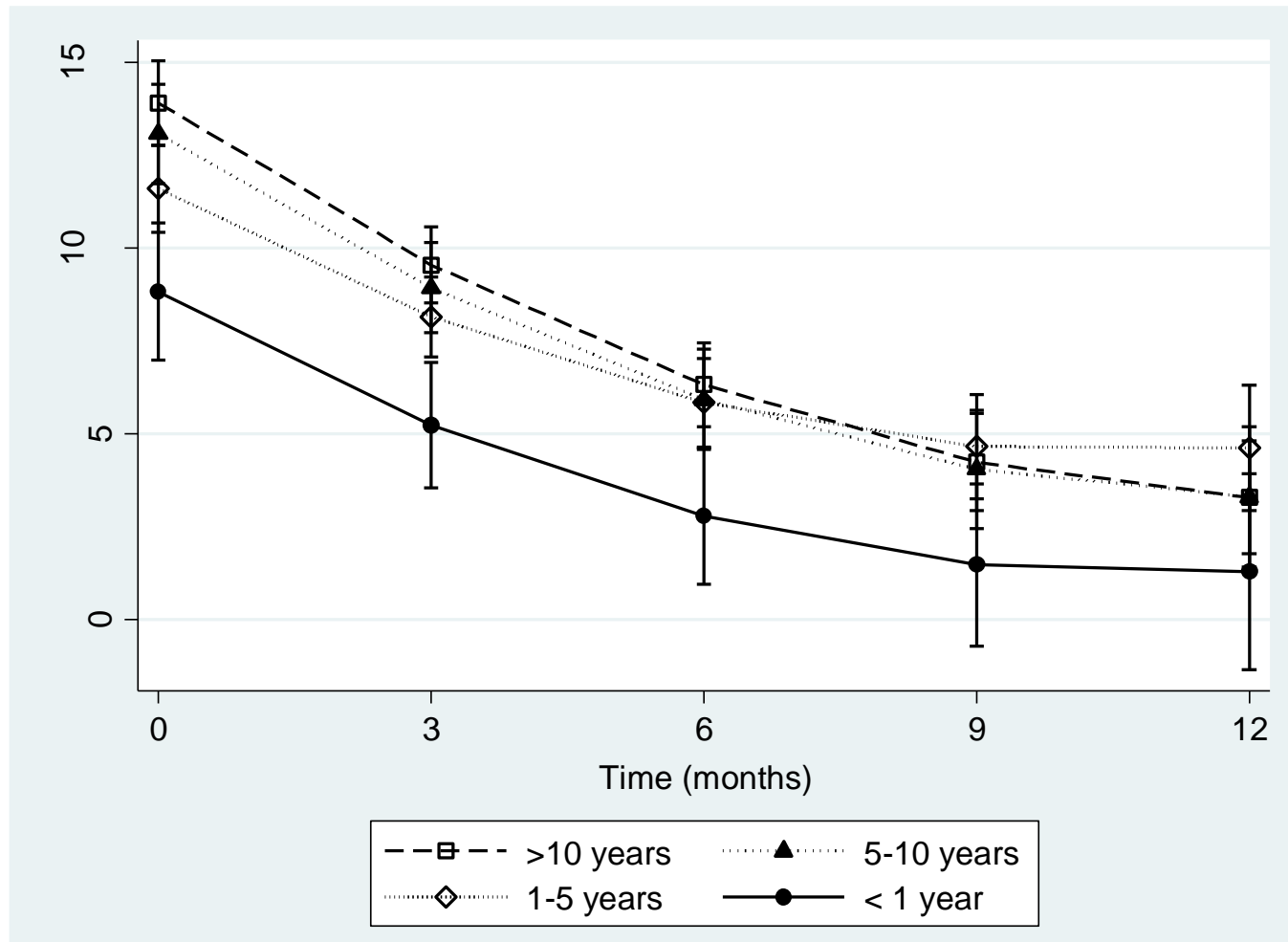
longitudinal outcomes K10

Predictive margins of **gambling duration status** with 95% confidence intervals



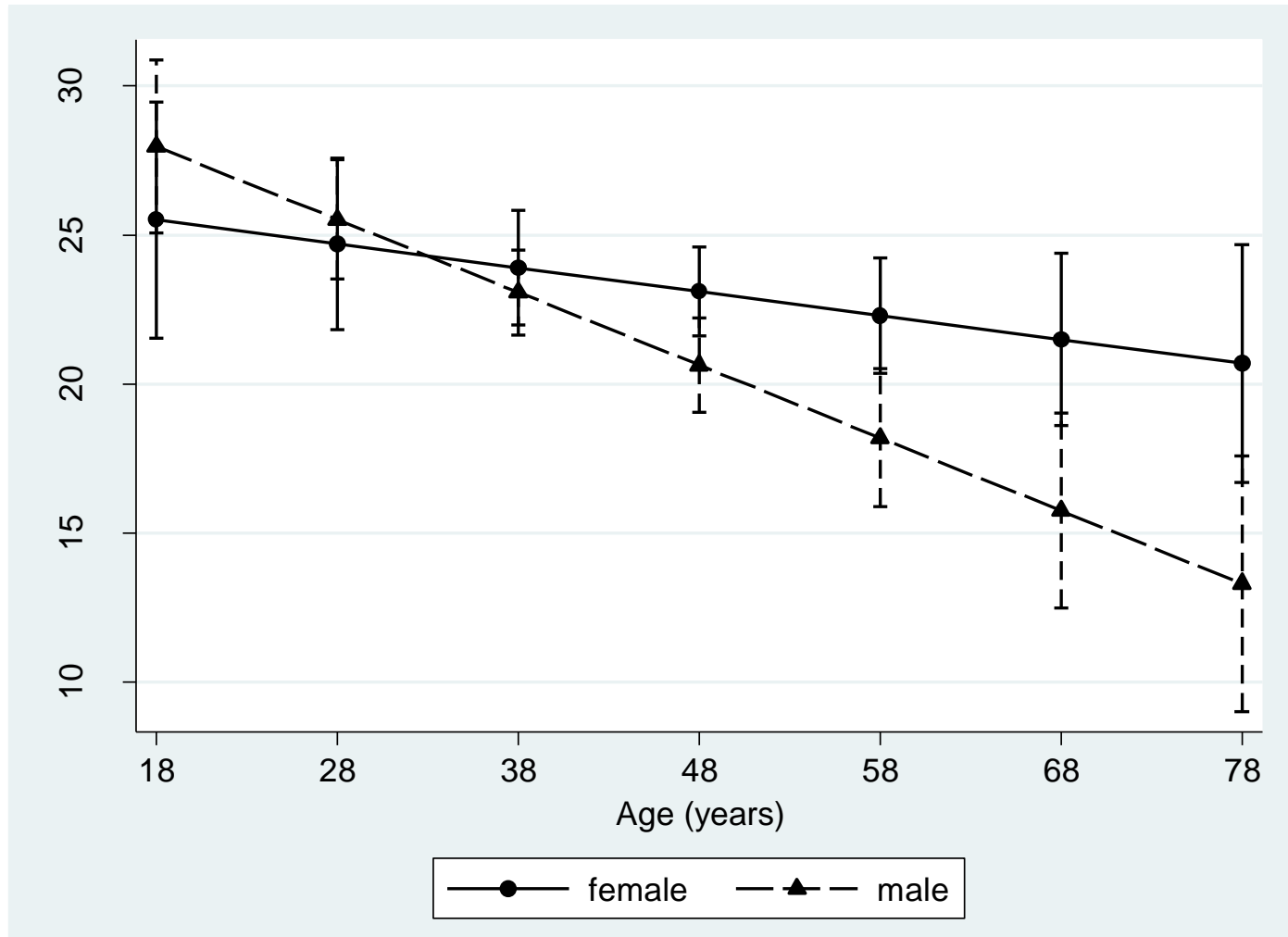
longitudinal outcomes WSAS

Predictive margins of **gambling duration status** with 95% confidence intervals



interactive effects VGS

Predictive margins of **gender status** with 95% confidence intervals.



summary

- time in treatment is a key element in outcome achievement
- this work provides evidence for modifying the treatment regimen to improve compliance and completion rates
- relapse is common and clients stop and start therapy due to changing circumstances and motivation

summary

- modelling time as a continuous variable provides a more realistic assessment of the client journey to recovery
- our proposed new study (4 component RCT) will build on this service level evaluation information and current RCT and lead to more flexible treatment options for clients
- at the service evaluation level, we aim to improve engagement and retention in treatment to improve overall service effectiveness

Statewide Gambling Therapy Service



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Is gambling a problem for you or someone close to you?

Gambling becomes a problem when it disrupts personal, family or job-related activities. People can find it difficult to resist the urge to gamble even when they want to stop. People may hide their gambling from others and severe financial problems can arise.

Statewide Gambling Therapy Service provides assessment, **evidence-based treatment** and **follow-up counselling** for problem gambling and other problems that can be related, like depression and anxiety. Treatment is available for the different forms of gambling e.g. pokies, TAB, card games, and Keno.

It is a **free, effective** and **confidential service** that will help you get control of your life.

Contact Us



Call, email, or use our Contact & Enquiry Form

• More •

Need Help?



One on one therapy, support groups and other services

• More •

Gambling Helpline



Get help 24 hours a day

Research



Outcomes research improving services

• More •

SGTS

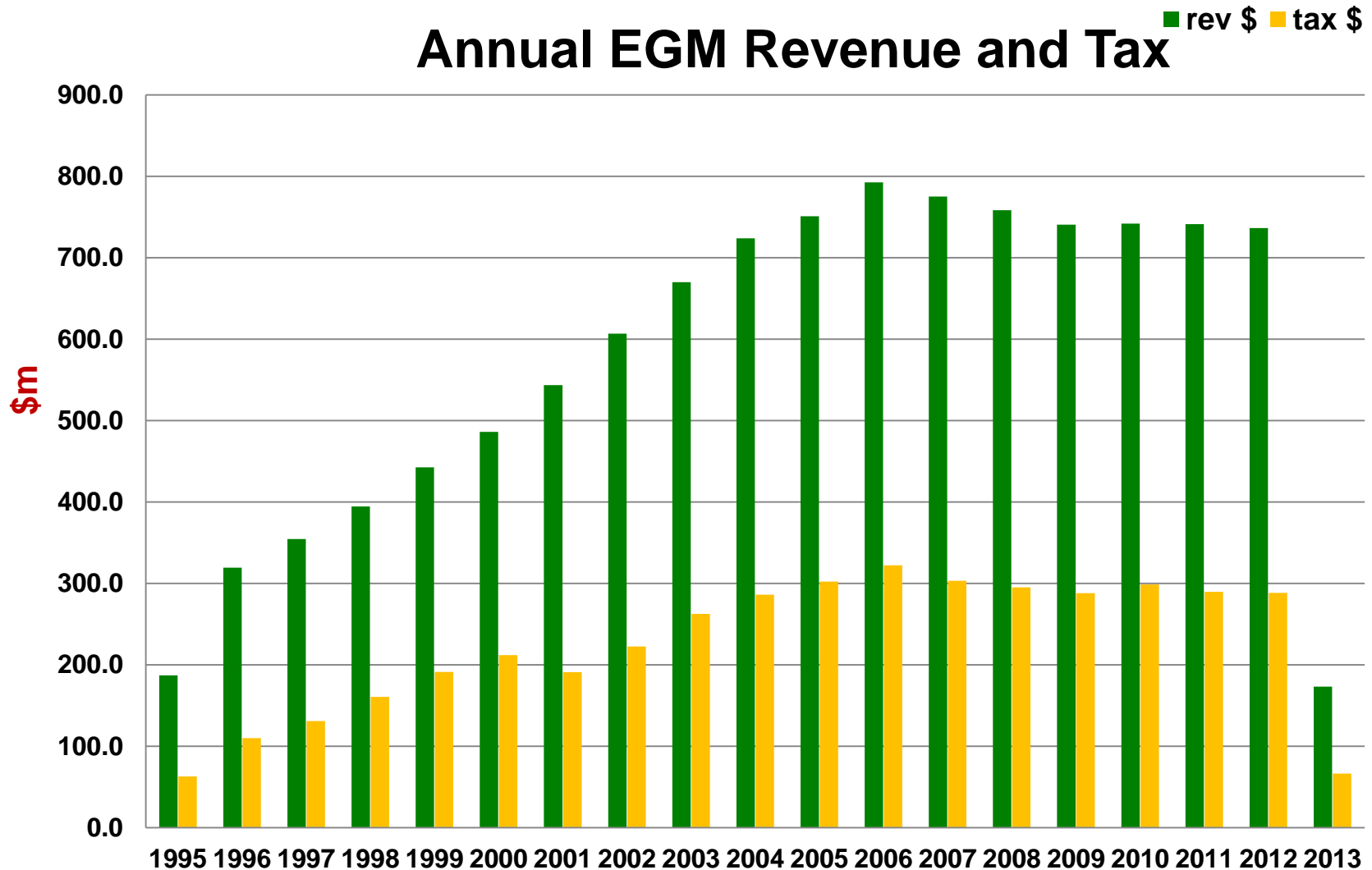
<http://www.sagamblingtherapy.com.au/>



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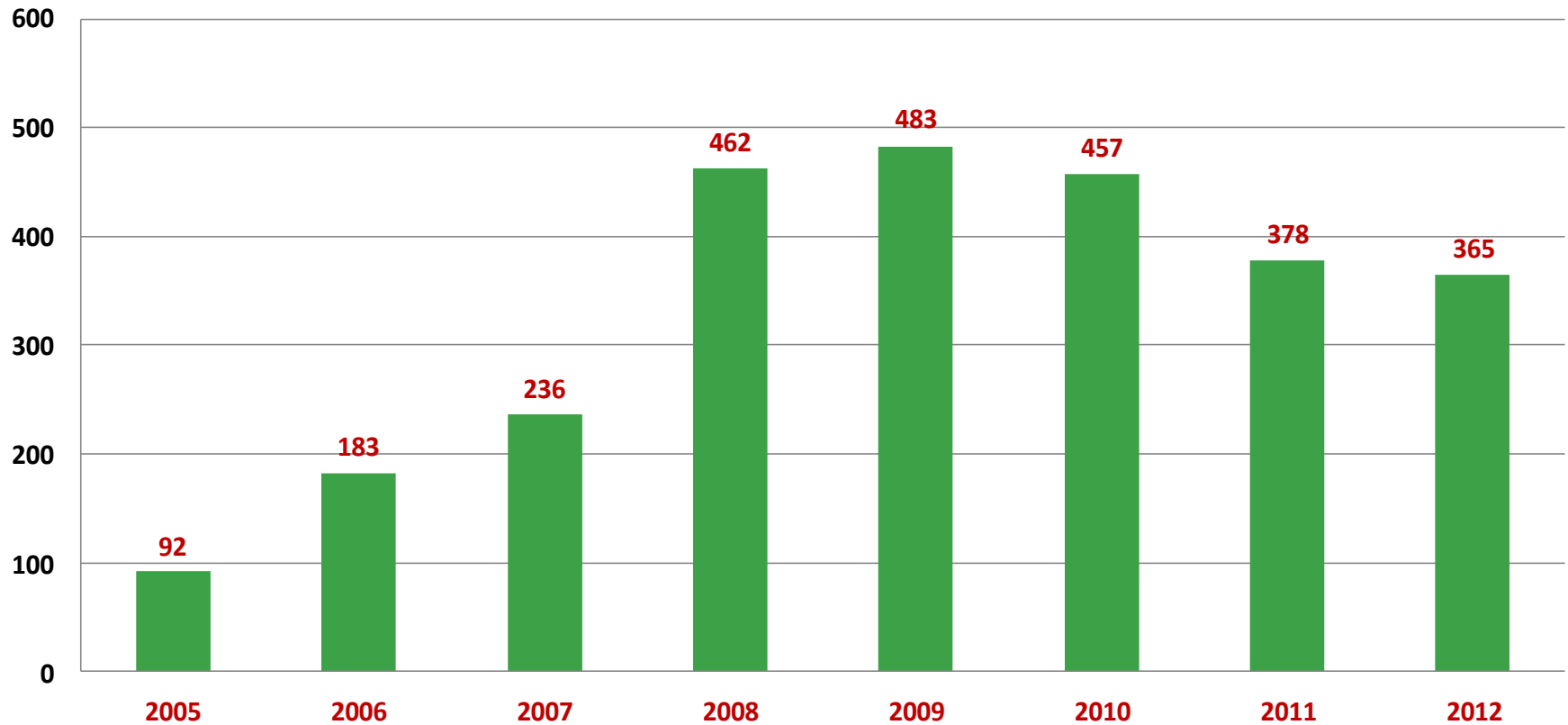
inspiring achievement

Annual EGM Revenue and Tax

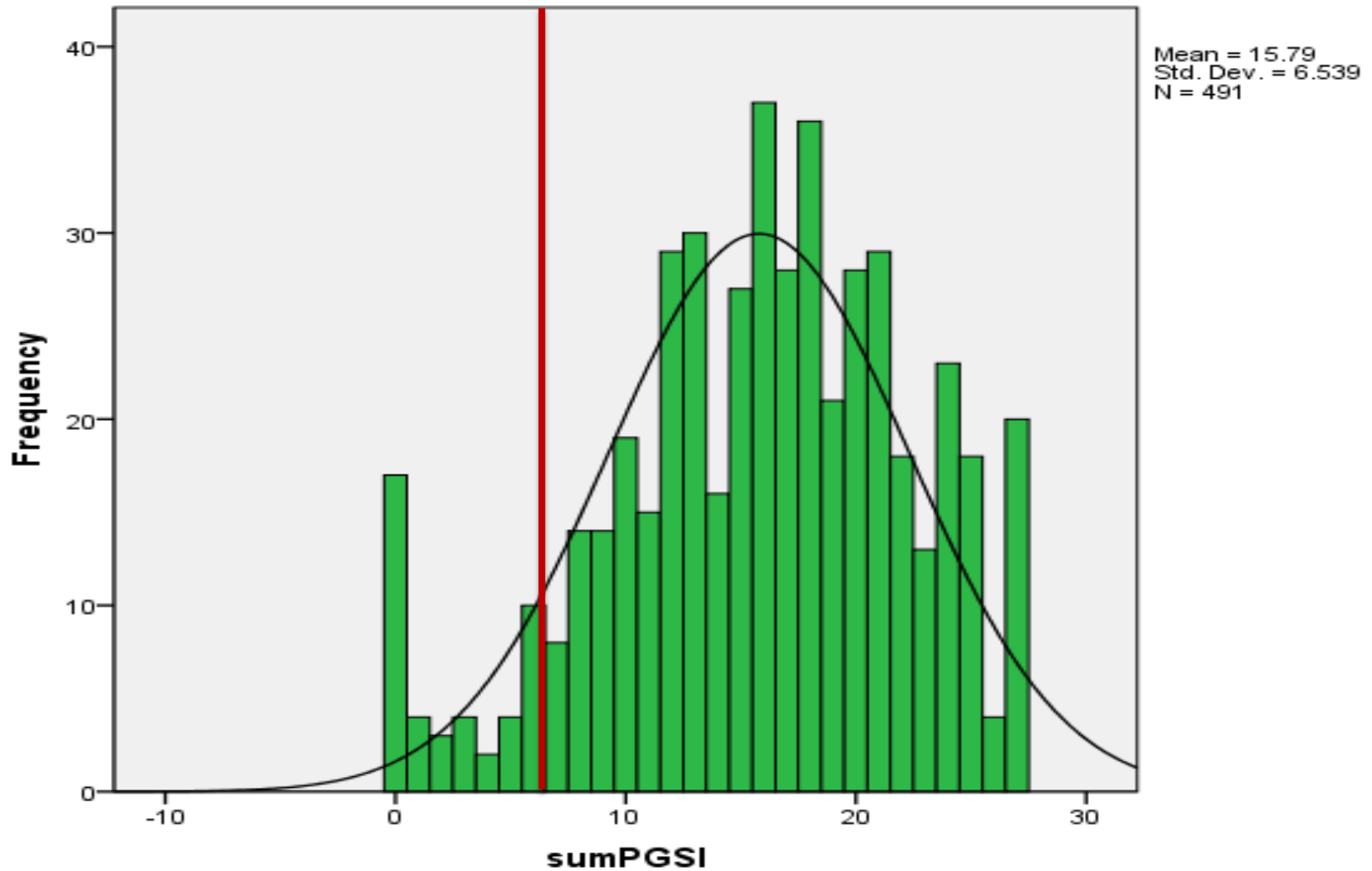


Annual new client registrations

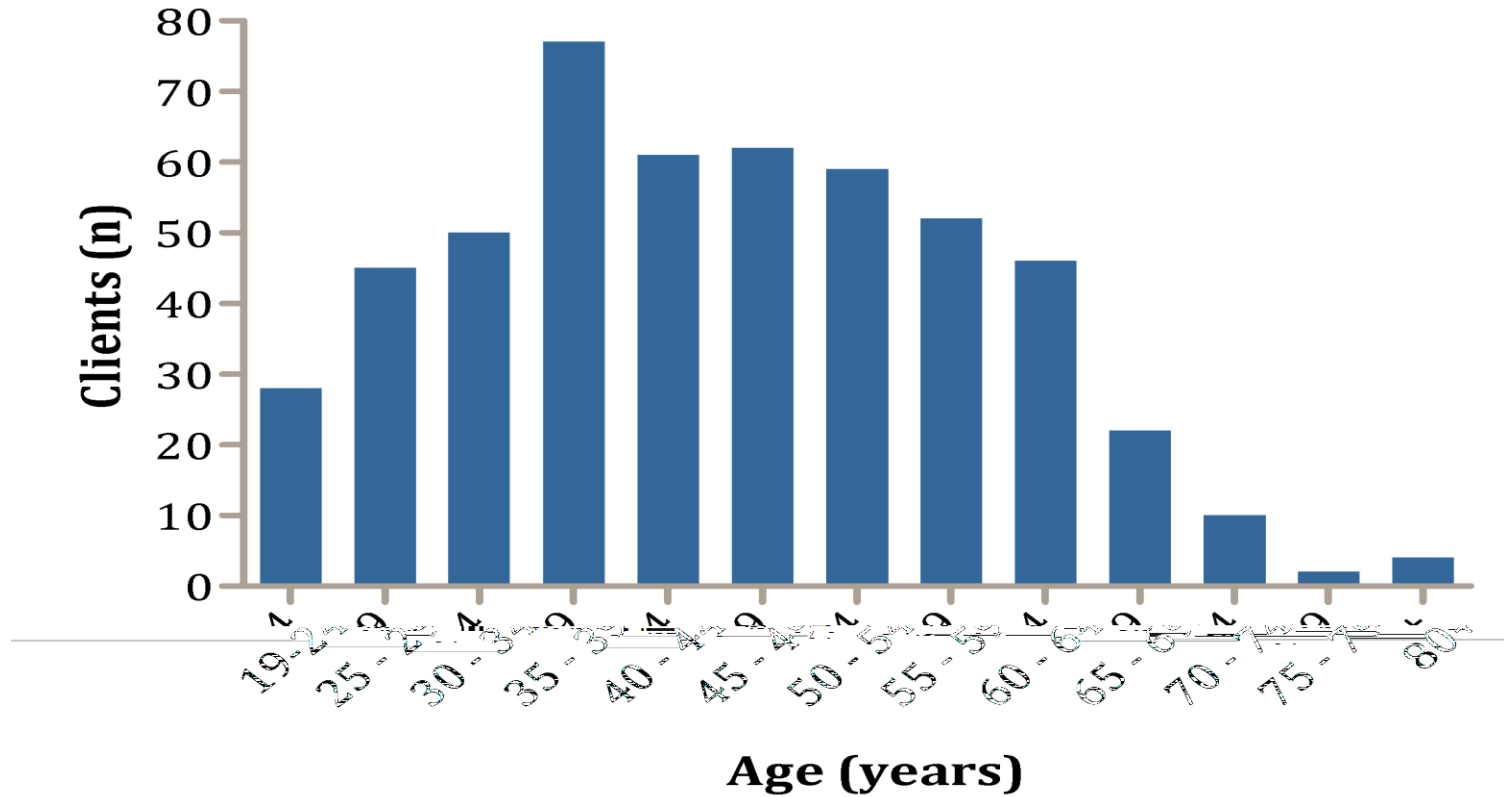
treatment clients - new registrations, 2005-2012



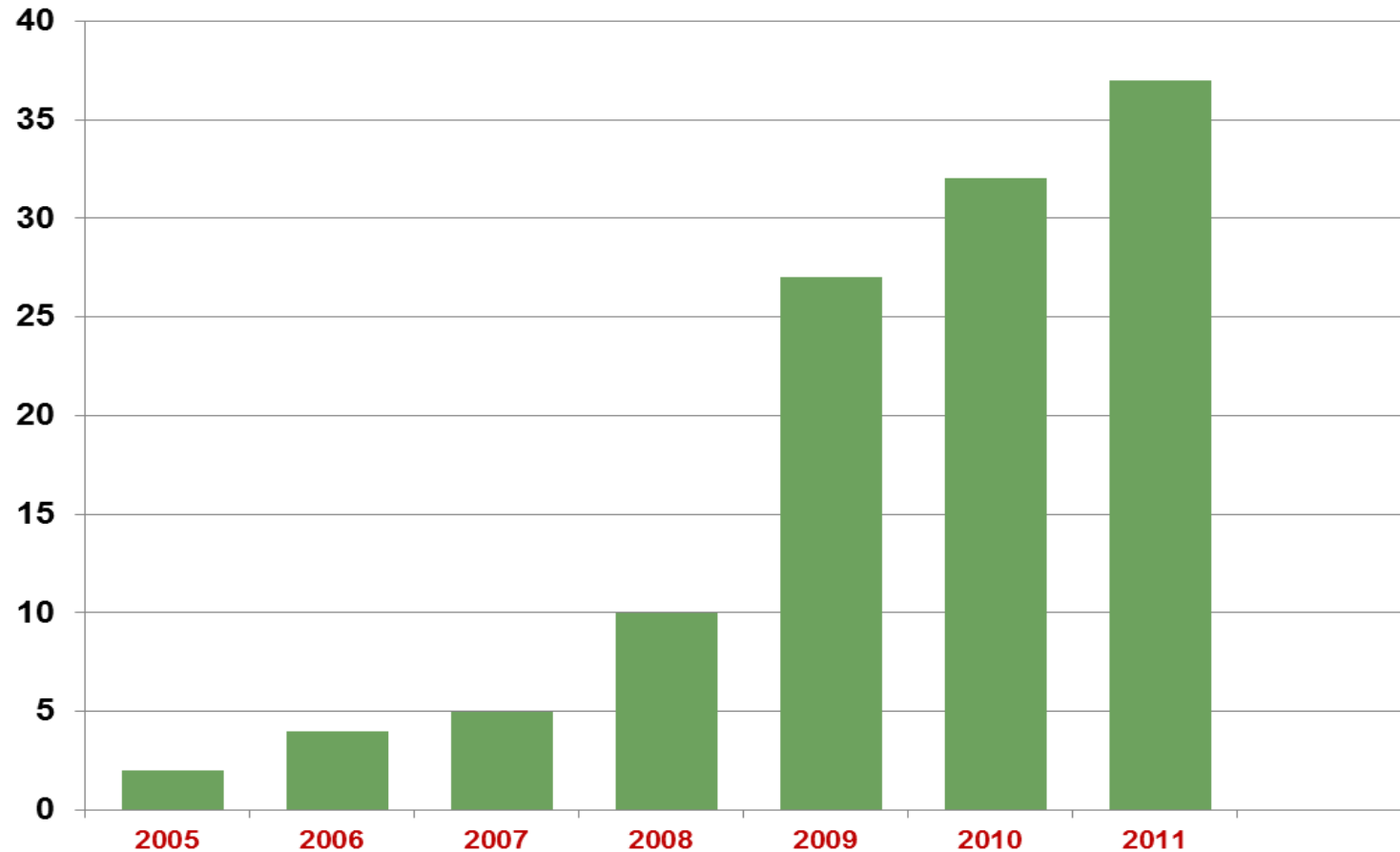
PGSI profile for standard cohort 2011



Age distribution



Indigenous client numbers increasing

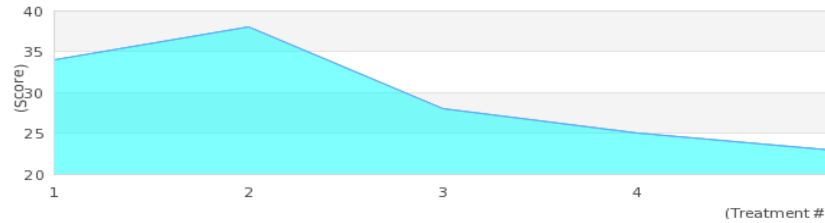


GRCS

Graph

20-08-2008 34 24-09-2008 38 21-11-2008 28 26-03-2009 25 18-12-2009 23

GRCS

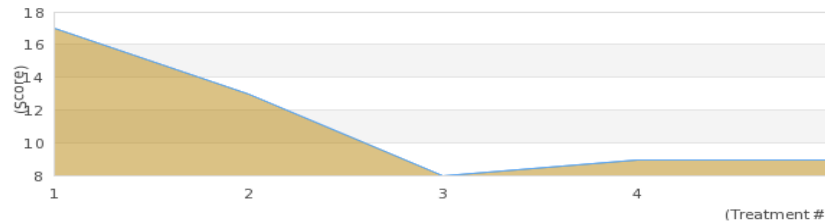


Kessler

Graph

20-08-2008 17 24-09-2008 13 21-11-2008 8 26-03-2009 9 18-12-2009 9

K10

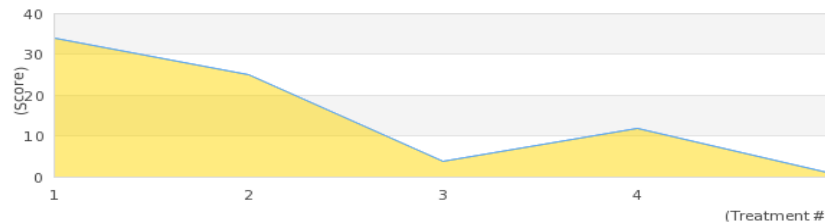


VGS

Graph

20-08-2008 34 24-09-2008 25 21-11-2008 4 26-03-2009 12 18-12-2009 1

VGS



WSAS

Graph

20-08-2008 24 24-09-2008 5 21-11-2008 0 26-03-2009 8 18-12-2009 0

WSAS





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