Paradox and Policy in Adolescent Health

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Four ideas
Paradox in adolescent health
Puberty
Adolescent health matters
Data driven responses
A paradox in adolescent health?

Puberty

Adolescent health matters

Data driven responses
Stronger, faster, fitter, smarter
but
morbidity and mortality worsen?
Australian Child and Adolescent Mortality

Current Policy Emphasis

Australian Child and Adolescent Mortality

Male
Female

deaths/100,000 pa

Age groups

1 to 4
5 to 9
10 to 14
15 to 18
19 to 24

Male
Female

0
10
20
30
40
50
60
70
80
90

Chronic Disease and Injury Dominate Adolescent Morbidity

Male DALYs in High Income

Female DALYs High Income
The paradox…..

*Health problems increase post-puberty*

• *Importance is greatest in high income countries*

• *Social context matters*
A paradox in adolescent health?

Puberty

Adolescent health matters

Data driven responses
Pubertal Cascade

8  9  10  11  12  13  14  15  16  17  18  years

adrenarche  ?  HPA axis
Pubertal Cascade

8  9  10  11  12  13  14  15  16  17  18 years

adrenarche  ?  HPA axis

gonadarche  HPG axis
Pubertal Cascade

8  9  10  11  12  13  14  15  16  17  18 years

adrenarche

gonadarche

Growth spurt

HPA axis

HPG axis

GH/somatomedin axis

Oxytocin system?
But that’s not all that is happening........
Adolescent brain development

Prefrontal cortex maturation
- extends into the third decade
- impulse control
- planning
- emotional regulation
‘Adult’ problems emerge

- Depression - anxiety syndromes
- Deliberate self-harm
- Substance abuse
- Eating & body image disorders
- Psychotic symptoms
- Functional somatic disorders & Pain syndromes eg migraine
- Range of physical health problems
Mental disorders commoner from puberty

- Depression - anxiety syndromes
- Deliberate self-harm
- Substance abuse
- Eating disorders
- Dysmorphophobia
- Psychotic symptoms
- Functional somatic disorders
- Pain syndromes eg migraine

Substance abuse & pubertal stage (ages 12-15 years)
Mental disorders commoner from puberty

- Depression - anxiety syndromes
- Deliberate self-harm
- Substance abuse
- Eating disorders
- Dysmorphophobia
- Psychotic symptoms
- Functional somatic disorders
- Pain syndromes

Deliberate self-harm by early and late pubertal stage

- %
  - I-III: Males, Females
  - IV/V: Males, Females
Depressive symptoms & pubertal stage in girls

Wave 1
Wave 2
Wave 3

Tanner stage

%
So is depression all that changes?
A paradox in adolescent health?
Puberty
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Victorian Adolescent Health Cohort Study

14 yrs
90%

17 yrs
83%

21 yrs
81%

24 yrs
78%

28 yrs
77%
ALCOHOL FREE ZONE

It is an offence to drink alcohol in this area.

MAXIMUM PENALTY £500

KNOW WHEN TO SAY WHEN 2
Does ‘sensible’ teen drinking protect against later harmful drinking?

Is there a safe level of teen drinking?
Teen drinking groups

- Started after 18 years
- Teen drinker - never risky
- Teen drinker - risky at 1 wave
- Teen drinker – risky at 2+ waves
Males

Alcohol use disorder

High-risk alcohol use

Alcohol-related sexual behavior

Prevalence

Non drinker

Waves

2001 Short Term NHMRC Guidelines

2001 Long Term NHMRC Guidelines

2007 NHMRC Guidelines
Alcohol for teenagers ‘never safe’

Paper casts doubt on drink guidelines

By NICK MILLER
HEALTH EDITOR

TEENAGERS who drink only small amounts of alcohol have a significantly higher risk of abusing alcohol or engaging in risky sexual behaviour as young adults, research has found.

The research casts doubt on new national guidelines that suggest there is a low-risk level of drinking for under-18s.

It provides evidence for a move away from the harm-minimisation approach and raises questions about the apt legal minimum drinking age, experts say.

A team from Melbourne’s Murdoch Children’s Research Institute says its study, which

level that may have been safe,” Dr Moore said.

The research, published in the Australian and New Zealand Journal of Public Health, found that by young adulthood, 27 per cent of men and 10 per cent of women who research at the Royal Children’s Hospital George Patton said he had expected that those with no evidence of excessive drinking patterns as teens would do well as adults.
NOW & THEN

Now The proportion of people in their twenties who have a partner and children is 16 per cent.

Then In 1976, it was 40 per cent.
Predicting Post-natal Depression from Teen Psychiatric Morbidity

Persisting Intermittent None

Odd Ratio 3.3 (1.2, 9.4)
A paradox in adolescent health?
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NUMBER OF ADOLESCENTS

Risk Factors

Population approaches

Symptomatic

Clinical/Individual Interventions

High Risk
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<th>Modifiable Risk factors</th>
<th>Protective factors</th>
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<td><strong>Community</strong></td>
<td>Perceived drug availability</td>
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Risk factors & substance use

- Alcohol
- Cigarettes
- Marijuana
- Other drugs

Risk factors vs. % of substance use

- 0-1
- 2-3
- 4-6
- 7-9
- >=10

Legend:
- Alcohol
- Cigarettes
- Marijuana
- Other drugs
Risk factors & anti-social behaviour

- suspended from school
- sold illegal drugs
- attacked someone
- carried a weapon

Risk factors

%
Risk factors & psychosocial problems

- Depressive symptomatology
- Deliberate self harm
- Homelessness
- Early sexual activity

Graph showing the percentage increase with risk factors: 0-1, 2-3, 4-6, 7-9, >=10.
Protective factors & psychosocial problems

- Depressive symptomatology
- Deliberate self harm
- Homelessness
- Early sexual activity
“For a dozen formative years children spend almost half their waking hours in schools”
Individual outcomes

- Improved learning
- Emotional well-being

Connectedness, sense of belonging

- Security
- Communication
- Positive regard
- Skills & opportunities

Social and learning environments

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Individual outcomes

- Improved learning
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Skills & opportunities

Social and learning environments

© The Conceptual Framework of the Gatehouse Project, Centre for Adolescent Health 1997
Gatehouse: a semi-structured process

- Assess social environment
- School action team
- Best practice at multiple levels
Types of bullying

- Teasing
- Spreading rumours
- Deliberately left out
- Physically threatened or hurt

Comparison

School X
Teachers don't notice me
Few chances to plan activities
Teachers not fair
Too much school work
Don't help others

Comparison
School X
Gatehouse: a semi-structured process

Assess social environment → School action team

Best practice at multiple levels
Gatehouse: a semi-structured process

Assess social environment → School action team

Best practice at multiple levels
Baseline: year 8 students (13-14 yo)
2 years: year 8 students (13-14 yo)
4 years: year 8 students (13-14 yo)
2007 Lancet Series in Adolescent Health

- Pubertal transitions in health
- Sexual & reproductive health
- Mental health
- Substance use
- Chronic conditions
- Youth friendly primary care services
Whole of government approach

No systematic national adolescent health data
No mechanism for coordination across sectors
Balance between prevention and health care
Use available resources & systems