



# Wireless Therapy

mobile games as a means of engaging adolescent clients



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Virtually Healthy Project  
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## Mental Health problems

A significant rise in suicide in Ireland over the last 25 years

Suicide leading cause of death among young males aged 15-24 in Ireland (Irish Department of Health and Children 1998)

Young females entering their teens susceptible to depression  
(Hanken & Abramson 1999)



# Engaging Adolescents in Psychotherapy

Mental health problems increase during adolescence

Therapists often find it difficult to engage with adolescents

- Stigma associated with therapy
- Therapist as authority figure



## Time spent with therapist

Adolescent attending one hour session once a therapy once a week

**1/168 or .59%**

Sessions typically 45 minutes

**1/224 or .45%**

Often twice a week

**1/448 or .22%**

Therapist time extremely limited



## Limitations of desktop games in therapy

- do not save therapist time
- limited by therapist computer competence
- limited by unreliable computer hardware in clinics
- high development cost for 3D games
- using 3d game in therapy would require therapist training
- literacy difficulties affected adolescent's use of the game
- keyboard input difficult for clients
- do not significantly engage clients outside of session
- do not provide a resource independent of time and space

## Issues with online access at home

- few clients have computers at home
- few clients have the required broadband internet connection to the internet
- there are ethics of unsupported access at home

Personal Investigator (Coyle & Matthews et al. 2005)



## Engaging Adolescents in Psychotherapy outside of a therapeutic session

Therapists have difficulties engaging adolescent clients in therapeutic activities between sessions

Low rate of task completion in these 'homework' activities



Mobile games might engage a disinterested adolescent population in professional therapeutic services and therapeutic activities

This research holds the potential to:

- improving adolescent mental health
- saving therapist time
- reducing cost of delivery of therapy
- traversing geographical distances



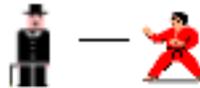
# Mobile Games?

- high rates of mobile phone ownership amongst adolescents, across all social groups.
- recent research shows that five million school children under sixteen own a mobile phone in the UK ([mobileyouth.org](http://mobileyouth.org)).
- resource available to adolescents independent of time and location.
- no additional hardware cost
- it is quicker and cheaper to develop for mobile phones
- save therapist time?
- removes/reduces the need for therapist training

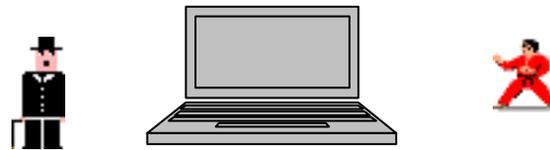


# Therapeutic models

Therapist - client



Therapist-computer - client





# Therapeutic models

Therapist-mobile device - client



Multiple clients – mobile device - therapist





# Mobile device...

As motivator

As reminder

As recorder

As narrative tool

As source of therapeutic information...



# Review of the area

- Mobile Learning applications
- Mobile Educational computer games
- Therapeutic usages of mobile devices

## Initial research into the therapeutic use of mobile technology:

- Access to this technology is independent of space and time
- Little temporal monetary cost
- An interactive medium
- Forces patients to express themselves briefly and concisely
- Allows patients to stay in contact with therapy.
- Help bridge the gap between inpatient and outpatient treatment

(European Eating Disorders Review 11, 3, 2003 pp279-290)



## Research Questions

**Can mobile games help increase adolescent engagement in therapeutic activities between therapeutic sessions?**

Presently adolescent engagement between sessions is almost non-existent

identify **impact** of the following:

- **Interactivity of the game**
- **Prompting/Reminder sent to mobile device**
- **Mobility and convenience of the device**
- **Privacy afforded**
- **Novelty of using mobile games in therapy**
- **Game fantasy used to convey therapeutic elements**



## Research Questions

**Is a mobile computer game more appealing than a mobile application with the same functionality?**

Is gaming element required for mobile engagement?

A comparative study: a mobile application and a mobile game, same aims

Is there a difference in the quality of interaction between the two?

Measures available include:

- Comparison of the quality and quantity of content created
- Analysis of time spent using both
- Opinions of adolescent clients and therapists



## Research Questions

Can therapeutic elements be incorporated into an appealing mobile computer game?

incorporating therapeutic materials into **mobile** games:

- reduced screen size
- reduced input capabilities
- take advantage of connectivity

Measures available include:

- Testing different designs - game genres, font sizes, amount of text, importance of connectivity, importance of presence (via device) of therapist etc.
- Analysis of how game is played
- Feedback from clients about the appeal of game



## Mobile Diary

### Rationale

- difficulties engaging adolescent clients in therapeutic activities between sessions
- adolescents are given workbook
- very low rate of task completion in these activities
- help scaffold a personal narrative
- sequencing of input

### Design

- take advantage of mobile devices' connectivity and portability
- mobile device as reminder
- therapeutic structured diary e.g. Positives, negatives, mood scale etc.

### Research Questions

- collect data on mobile application





## Positive Thoughts

### Rationale

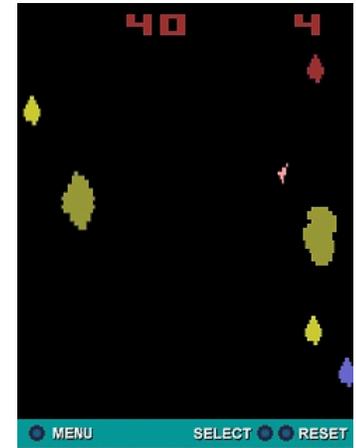
- positive motivational statements
- deliver these to clients in a dynamic motivating manner

### Design

- therapists send personalised game missions to clients' phones
- client will receive a positive personal message from the therapist
- the shoot-em-up genre e.g. Asteroids.

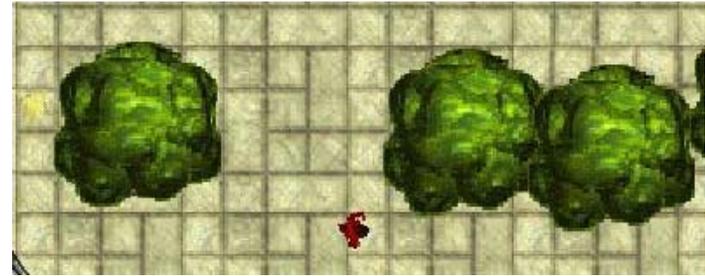
### Research Questions

- examine what aspect of mobile games are engaging





## Mobile Solution Detective



### Rationale

- developed from desktop game PI (Coyle & Matthews et al. 2005)
- encourage personal data gathering
- engage client between sessions
- save therapist time

### Design

- missions sent by therapist to client's phone
- provide engaging structure for personal narrative
- in-game rewards for task-completion
- detective fantasy or choice of fantasy
- in session, therapist & client construct a 'case'





## Questions?



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Thank you for your time.



## Testing

Trials of this system will be run in the Mater Hospital and several of its associated clinics in Dublin.

Research conclusions will be made as a result:

- pre- and post- questionnaires for therapists and clients
- detailed interviews with therapists
- client attendance records
- log data from client's mobile games



## Publications and Presentations

Matthews, M. and Doherty, G. (2005) Wireless Therapy: mobile games as a means of engaging adolescent clients. *Accepted abstract and presentation for the Cybertherapy conference, 2005.*

Coyle, D., Matthews, M., Sharry, J., Nisbet, A. and Doherty, G. (2005) "Personal Investigator: A Therapeutic 3D Game for Adolescent Psychotherapy". Full paper for *International Journal of Interactive Technology and Smart Education* (in press).

"Computer Mediated Adolescent Psychotherapy using Interactive 3D Gaming" (2004). Invited speaker at the first Games for Health Conference, Sept 17th, 2004, Madison, Wisconsin, US.

Matthews, M., Coyle, D., Sharry, J., Nisbet, A. and Doherty, G. (2004) "Personal Investigator: Computer Mediated Adolescent Psychotherapy using an Interactive 3D Game". Full paper included in the *proceedings of NILE2004 Narrative and Interactive Learning Environments*, Edinburgh, Scotland. Pp.75-81.

Coyle, D. and Matthews, M. (2004) "Personal Investigator: A Therapeutic 3D Game for Teenagers". Presented at the 'Social Learning Through Gaming' Workshop, CHI 2004 Conference on Human Factors in Computing Systems, Vienna, Austria.

Coyle, D., Sharry, J., Nisbet, A. and Matthews, M. (2003) "Virtual Perspectives: Developing a Therapeutic 3D Virtual Environment for Adolescents." *Invited Publication in Eisteach: A Quarterly Journal of Counseling and Psychotherapy 2 (25), pp.27-31.*