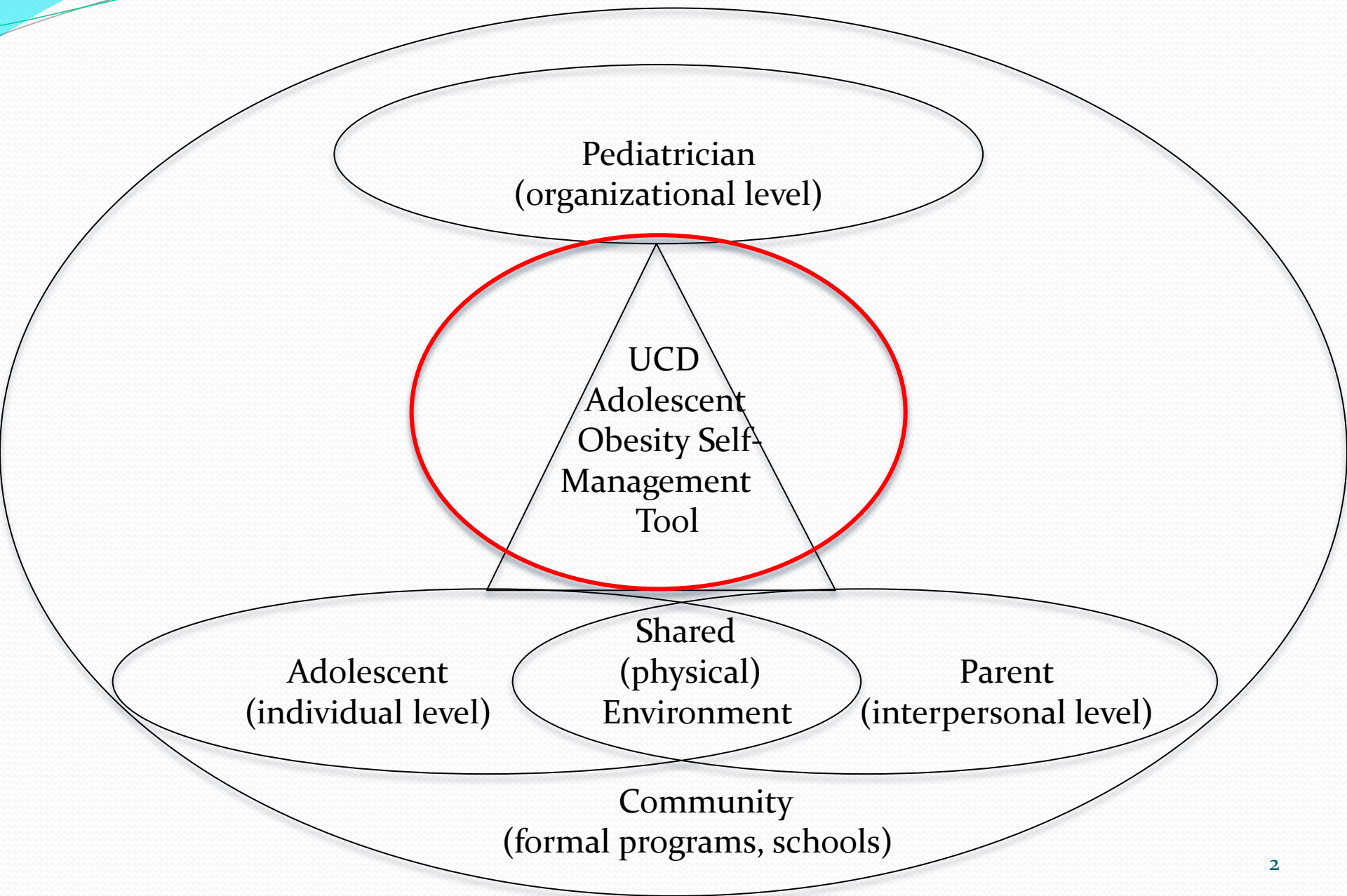# Determining Technological Functionality and Design Requirements for Adolescent Populations

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Conceptual Model for Socio-Ecological Assessment of CHT within the Context of the Chronic Care Model-

Pediatrician
(organizational level)

UCD
Adolescent
Obesity Self-
Management
Tool

Shared
(physical)
Environment

Adolescent
(individual level)

Parent
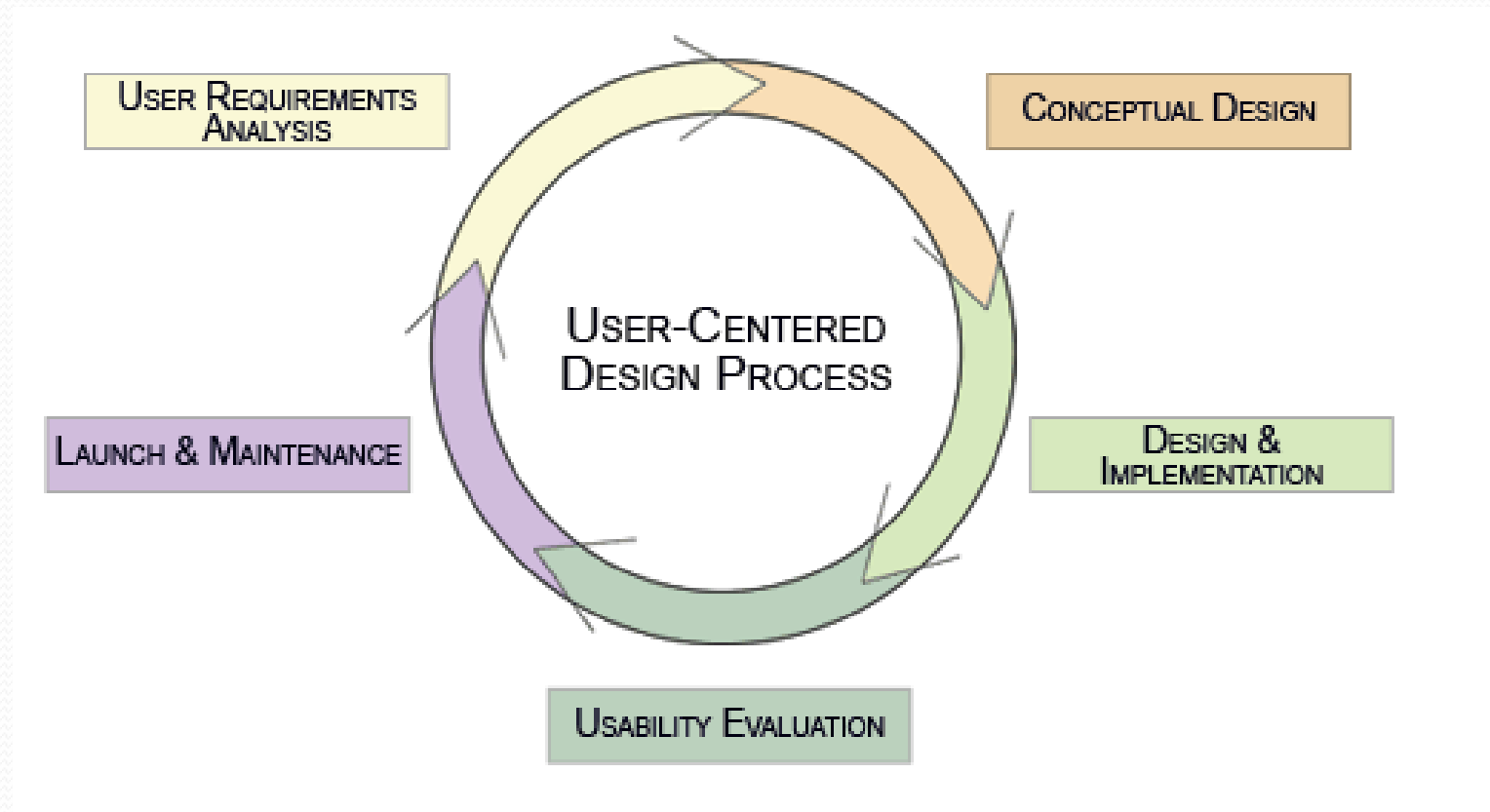(interpersonal level)

Community
(formal programs, schools)

2

UCD Approach

- Target group users are in the drivers seat
- Includes "user mental model"
- Method enhances user acceptance, usability and functional propriety
- Has been shown to improve system usefulness, information quality, and interface quality

D'Alessandro,2001; Gagnier,2009; Johnson,2005;

UCD Process

http://usability.msu.edu/approach.aspx

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Figure 1: Research Model for Intent to Use UCD Application for Overweight and Obese Adolescents Age 12-17

Performance Expectancy (UTAUT) *A, D, P

Effort Expectancy(UTAUT) *A, D, P

Social Influence (UTAUT) *A, D, P

Facilitating Conditions (UTAUT) *A, D, P

Observational Learning (SCT) *A

Reinforcements (SCT) *A

Principle of Virtual Rewards (PT) *A

Intent to Use Application *A, D, P

*Applies to:
A=Adolescent
D=Doctor
P=Parent

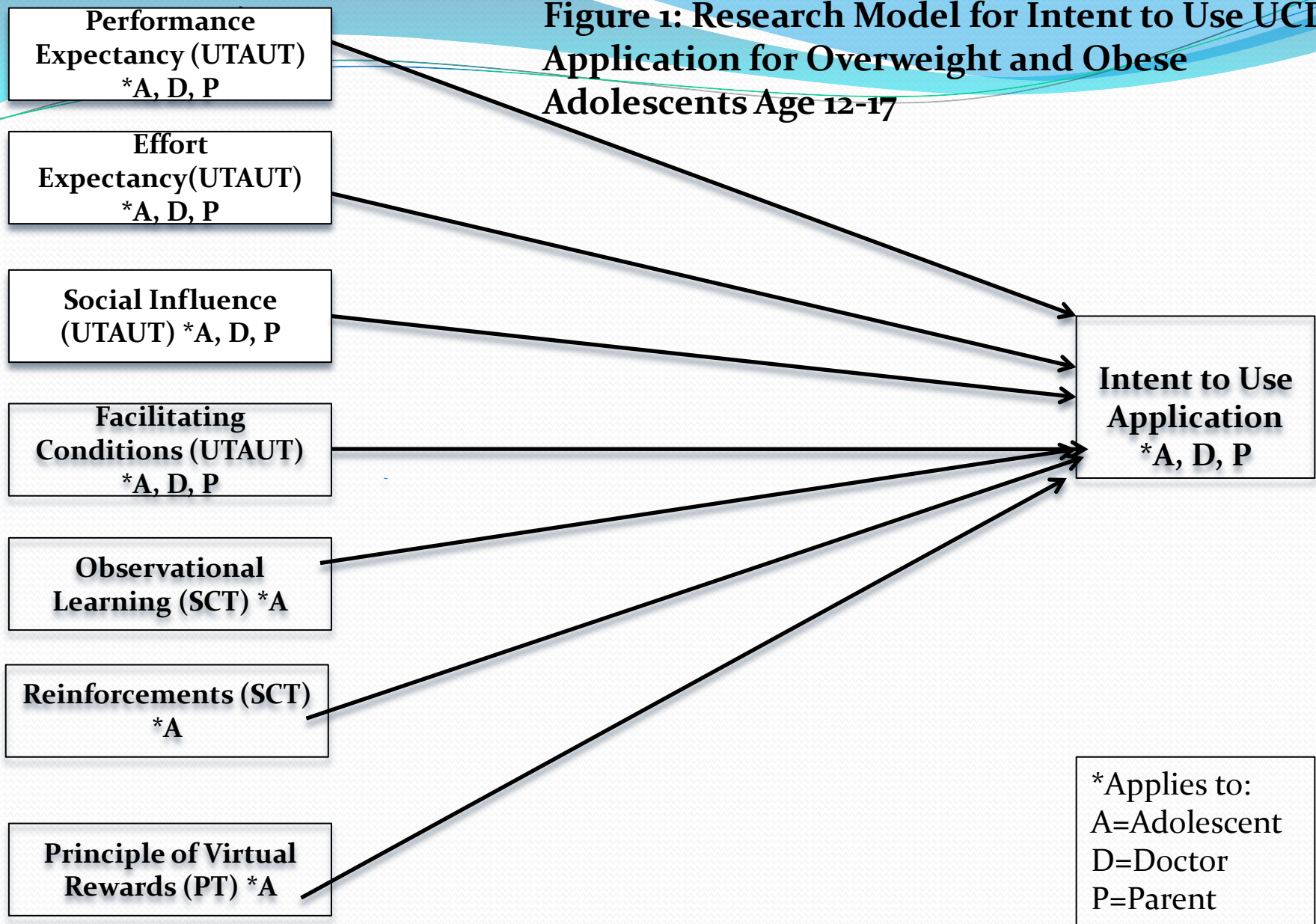Bandura, 1972; Fogg, 2003; Venkatesh, 2003

Figure 2: Unified Theory of Acceptance and Use of Technology (UTAUT)* Outlines Parental Perceptions That May Improve User-Centered Design (UCD) Applications for Ongoing Use by Overweight or Obese Adolescents.

Supporting Questions for each Construct:

How could smart phone or Internet applications be helpful in your role in supporting your child's weight management?

How easy or difficult would it be for you to learn how to use a smart phone or Internet application designed to help your child make improved lifestyle habits and food choices?

If your child wanted you to use an application that helped him or her improve lifestyle habits and food choices, how willing would you be to use the application? How would your pediatrician's recommendation influence your decision to adopt this application?

Performance Expectancy Degree to which individual believes using the system will help him or her meet goals (for supporting adolescent weight management).

Effort Expectancy
Degree of ease associated with use of the system.

Social Influence
Degree to which individual perceives important others believe he or she should use the system

Intent to Use
Intended, predicted, or planned use of the system.

*Adapted from Venkatesh[19]

Knoblock-Hahn, LeRouge. 2014; *J Acad Nutr. Diet.*

Summary

- As we continue to rely on technology as a form of meaningful intervention, it is important to get meaningful and useful design and functionality for the target audience in the early stages of development.

- Behavioral theory applied to the UCD model can enhance usability, intent to use, and use behavior.

- Traditional qualitative methods such as focus groups and interviews are appropriate to use as a first step to the UCD process.

- Questions at amykhahn@gmail.com