

International Conference, Flu-2015

June 8-10, 2015, Chicago, USA.

<http://flu.conferenceseries.com/>



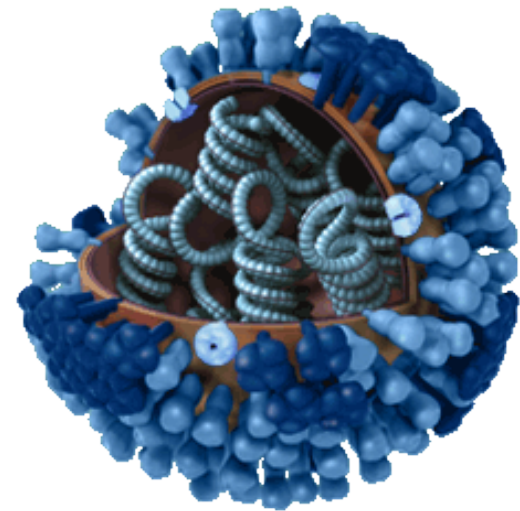
Structural Equation Modeling of Male/Female Handwashing Behaviors During The A (H1N1) Pandemic Influenza in 2009-2010*

PhD Benicio Gutiérrez-Doña
Distance State University of Costa Rica, Central America

*Adapted from: Gutiérrez-Doña, B., Renner, B., Reuter, T., Giese, H., & Schubring, D. (2012). Health behavior education, e-research and A (H1N1) influenza (swine flu): Bridging the gap between intentions and health behavior change. *Procedia - Social and Behavioral Sciences*, 46, 2782-2795. doi:10.1016/j.sbspro.2012.05.565

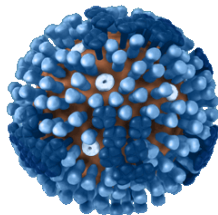
Content

- **A (H1N1) Pandemic Influenza (Swine Flu) 2009/2010 and Disease Control**
- **Theoretical Model: Health Action Process Approach (HAPA-model)**
- **Study Hypotheses**
- **Method**
 - **Procedure and Participants**
 - **Analyses**
- **Measures**
- **Results**
 - **Structural Equation Modeling**
- **Discussion**



A (H1N1) Pandemic Influenza (Swine Flu) 2009/2010 and Disease Control

- **The 11th of June 2009 the WHO declared the “swine flu” pandemic in phase six.**
- **In July 2009, more than 160 countries confirmed more than 170,000 cases of A(H1N1).**
- **Education on hand hygiene (health behavior), the use of protective masks, and the recognition of risk factors (risk perception) and symptoms identification (knowledge) were, among others, fundamental measures in coping with the threats of “swine flu” and seasonal influenza.**
- **Boyce and Pittet (2002) assure that good hand-hygiene practices and adherence to handwashing recommendations at home, at work and in health care settings are secure practices to prevent acquisition of multiple forms of bacteria and viruses.**



Gutiérrez-Doña (2015), International Conference, Flu-2015, 8-10 June, Chicago, USA



How to handrub? WITH ALCOHOL-BASED FORMULATION

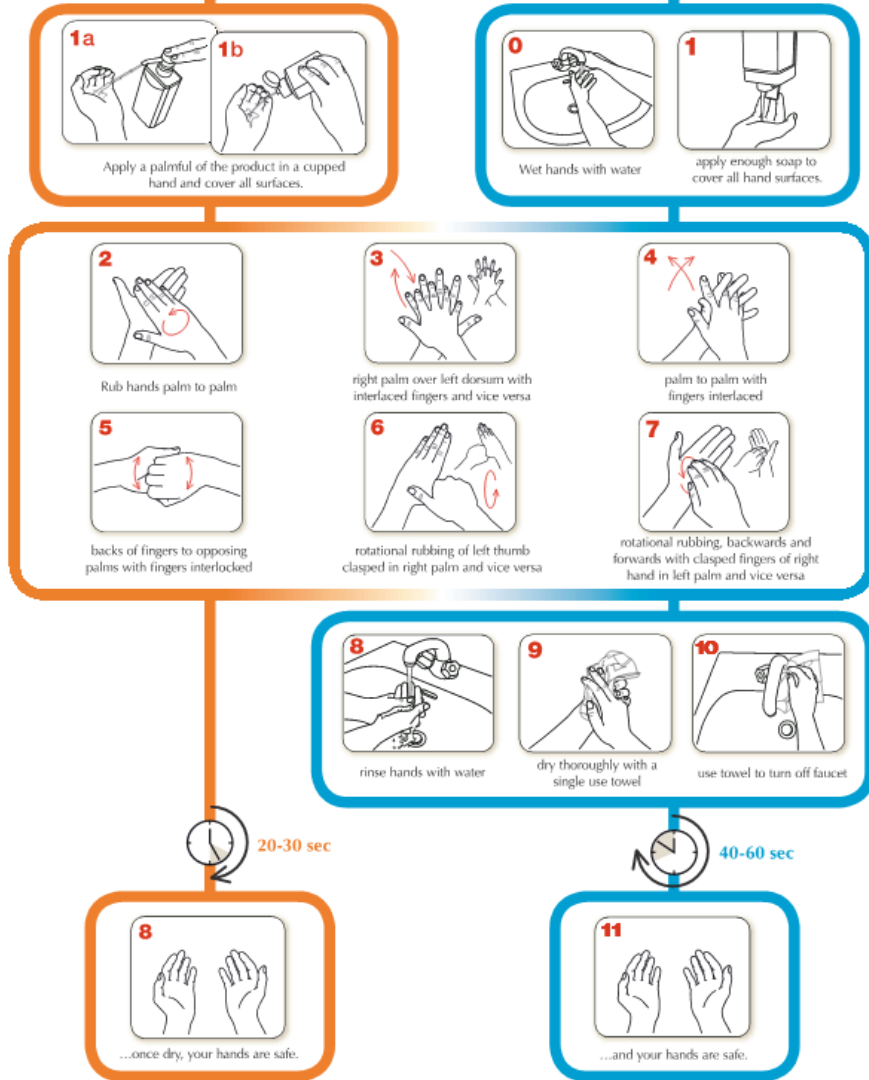
How to handwash? WITH SOAP AND WATER

Socialcognitive Research Questions

- **What motivated Costa Ricans to adopt and maintain the WHO handwashing protocol during the pandemic?**

Specifically, what motivated people for:

- **handwashing after having contact with others?**
- **handwashing after having used the bathroom?**
- **handwashing before eating?**
- **handwashing after touching objects contaminated by sick persons?**



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

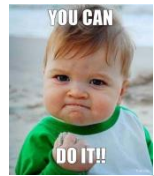


October 2008, version 1.

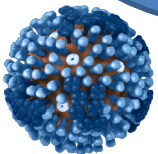
Gutiérrez-Doña (2015), International Conference, Flu-2015, 8-10 June, Chicago, USA

USA

Socialcognitive predictors of Handwashing (HAPA-model, Ralf Schwarzer)

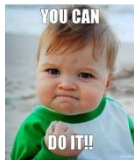


Gutiérrez-Doña (2015), International Conference, Flu-2015, 8-10 June, Chicago, USA



Study Hypotheses for Handwashing Behaviors during AH1N1 Wave1/2 (2009-2010)

- **General Hypothesis:** It was expected that perceived risk of getting swine flu/common influenza and handwashing self-efficacy would predict an increase in handwashing intentions, and consequently the adoption/maintenance of handwashing behaviors during the pandemic.
- **Gender/cultural-related hypothesis:** It was expected that males and females would show a different pattern of causal relations in the adoption/maintenance of handwashing behaviors. This hypothesis was based on cultural and gender differences assumptions for Costa Ricans.
- **Long-term effect hypothesis:** It was expected that perceived risk of getting swine flu/common influenza, handwashing self efficacy, and handwashing intentions during the first wave of the pandemic (2009) would account for variance in handwashing behaviors during the second wave of the pandemic swine flu (2010).



Method



• Participants & Data Collection

Costa Rican random sample

Time 1, $n = 428$ (65% females, 35% males; $M_{\text{age}} = 33$ years);

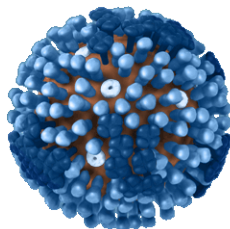
Time 2, $n = 97$ (random subsample)

• Data Collection

E-Research tool: UNIPARK

T1: November 2009;

T2: June 2010.



Measures & Analyses

- ***Preintentional motivation process***
 - ***Risk Perception (6 items, 1-7, $\alpha = .80$)***
 - How likely is it that an average person of your sex and age will get A (H1N1) influenza virus this year?
 - ***Handwashing self-efficacy beliefs (4 items, 1-6, $\alpha = .85$)***
 - I am sure I can always wash my hands before eating.
- ***Mediator***
 - ***Handwashing Intentions (4 items, 1 to 7, $\alpha = .73$)***
 - I intend to wash my hands before eating
- ***Postintentional volition process***
 - ***Handwashing behavior (4 items, 1-7, $\alpha = .71$)***
 - I wash my hands before eating
- **Analyses**
- **STRUCTURAL EQUATION MODELING (LISREL)**
 - **MULTIGROUP APPROACH**
 - **LONGITUDINAL APPROACH**

Figure 2. LISREL path diagram of **female's relationships between predictors and criterion at T1 ($n = 196$).**

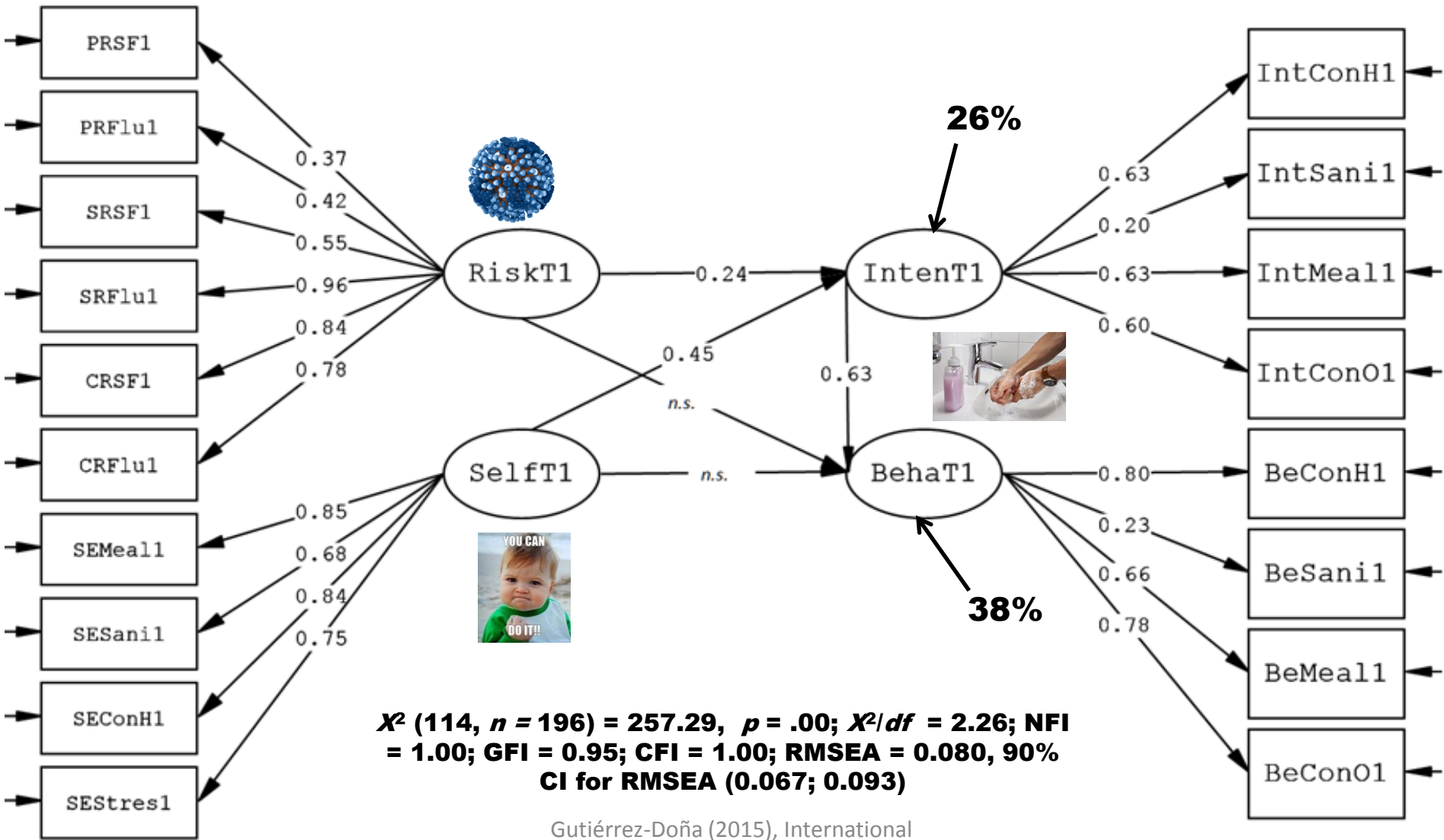
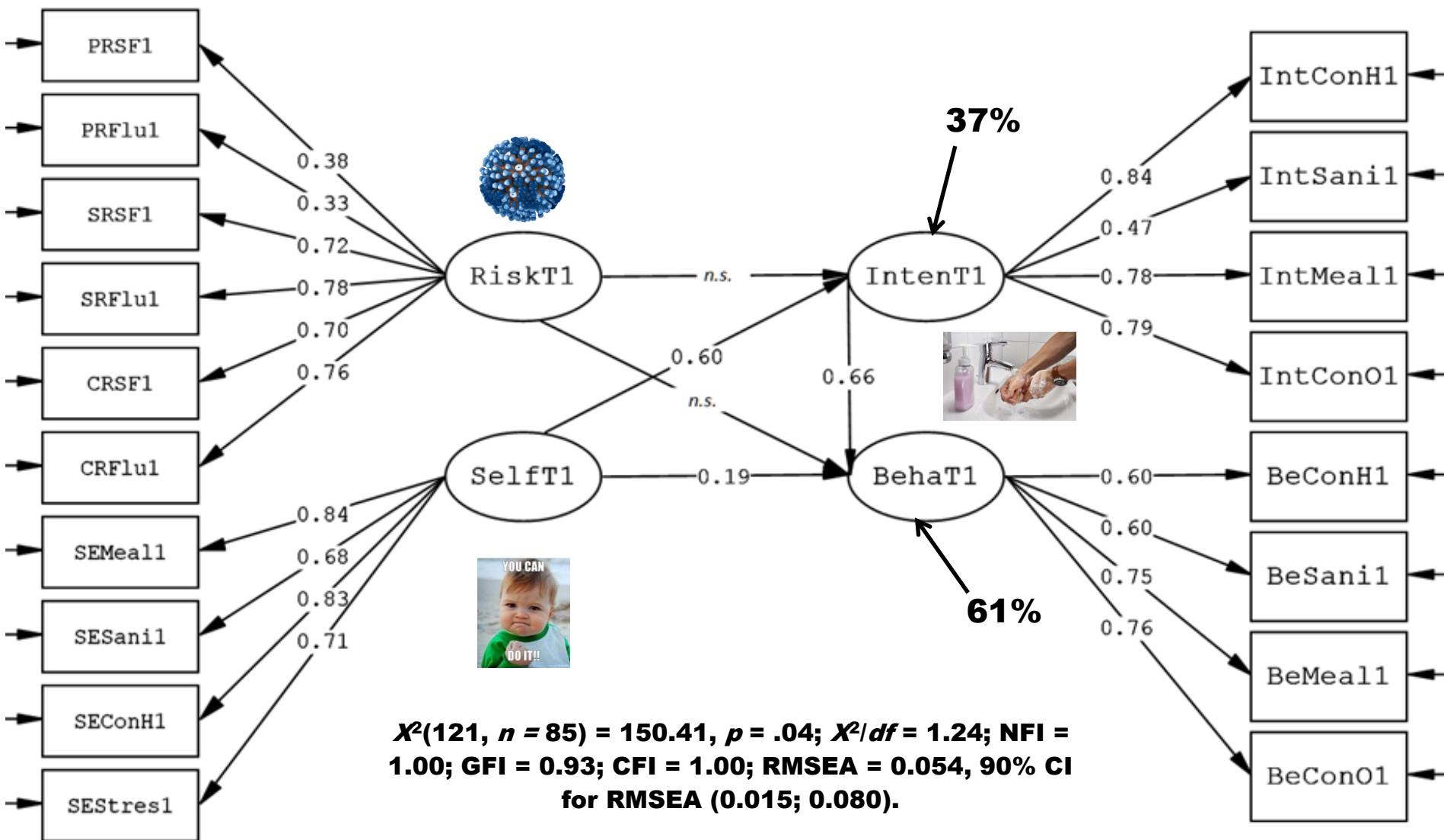
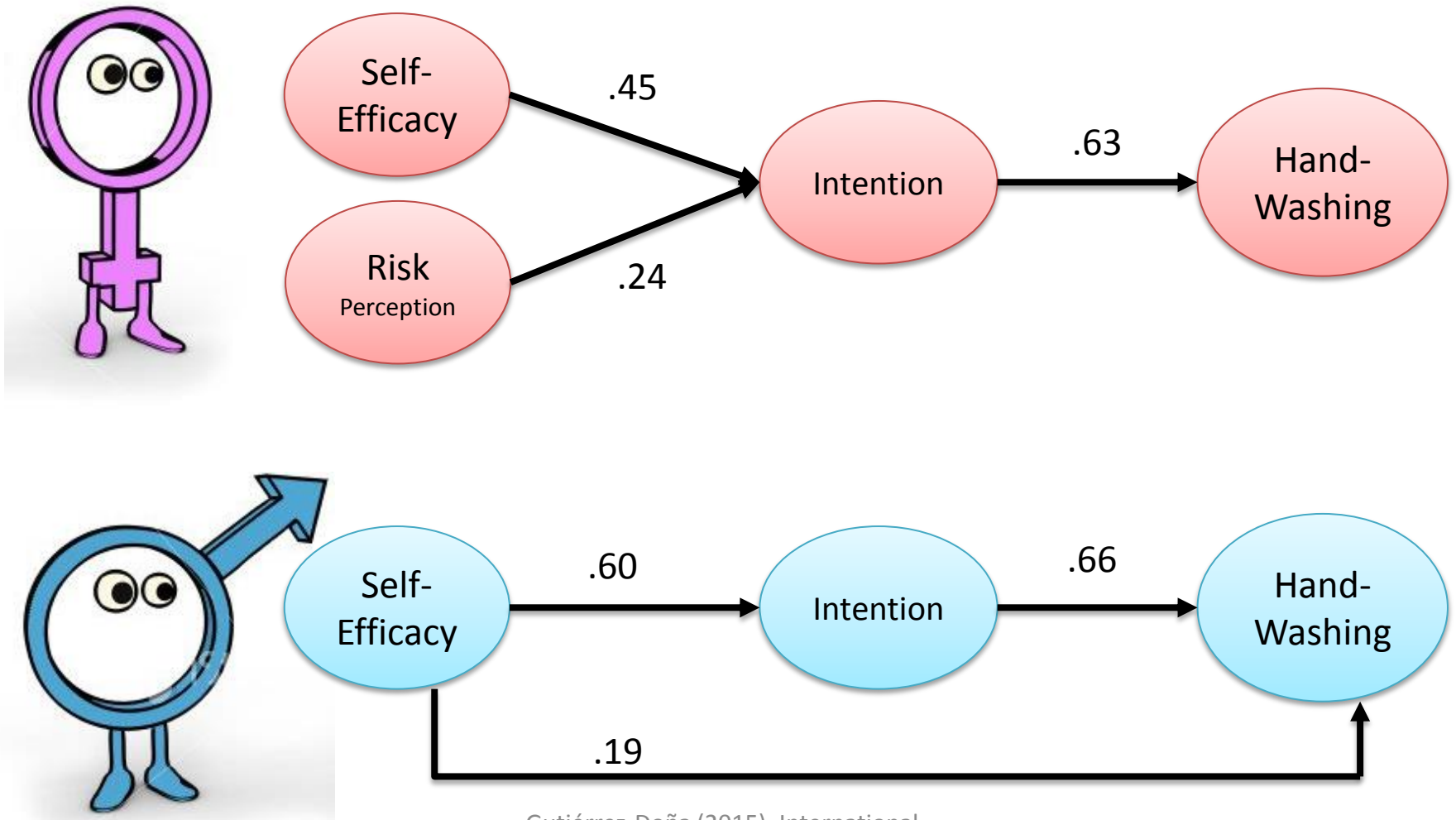


Figure 3. LISREL path diagram of male's relationships between predictors and criterion at T1 ($n = 85$).

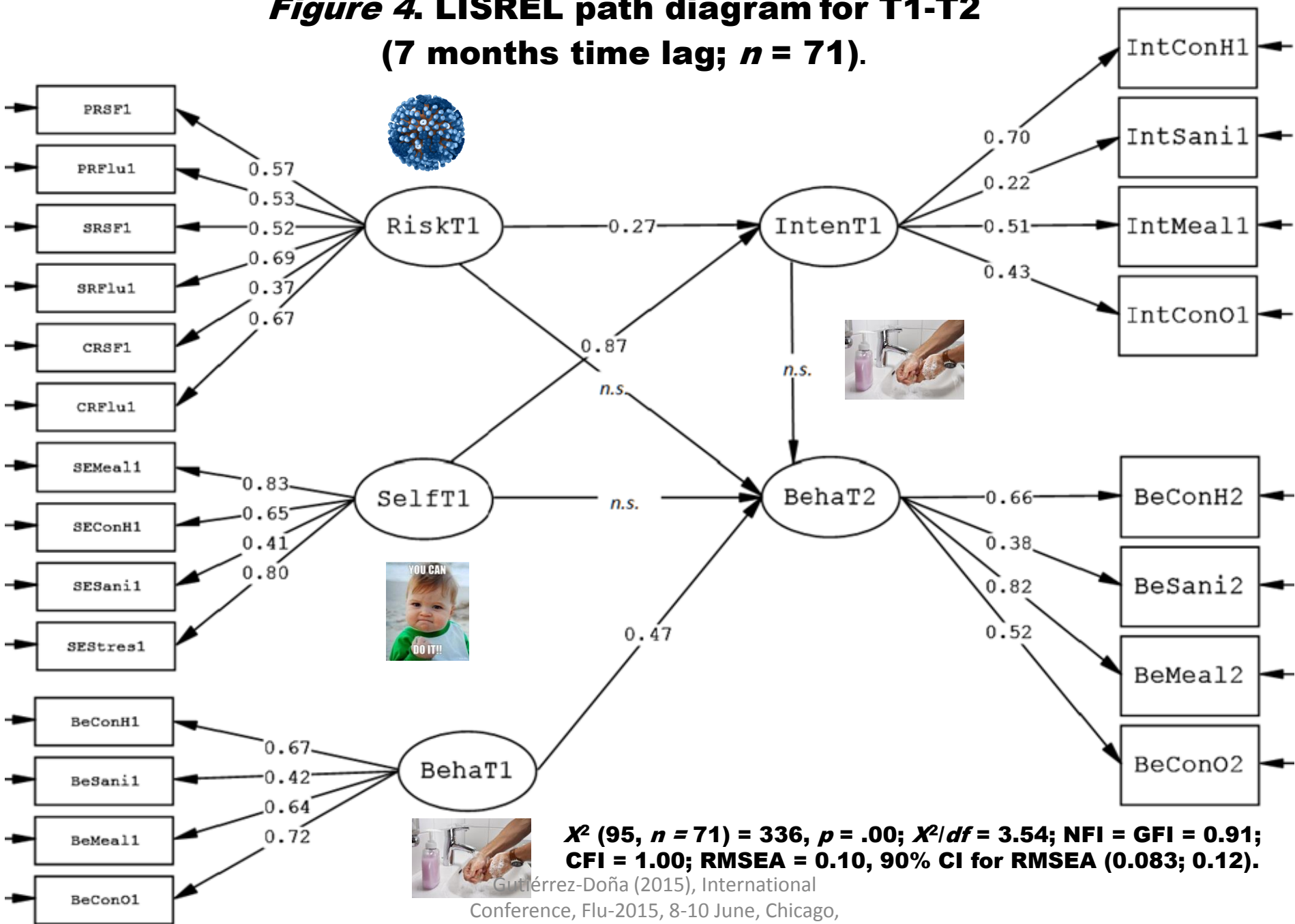


Comprehensive Model of Handwashing Behaviors for the Prevention of Influenza in Costa Rica



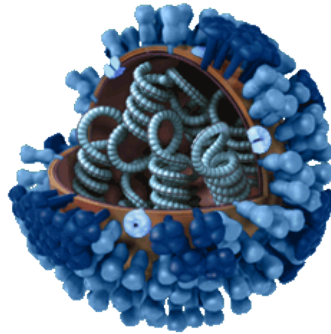
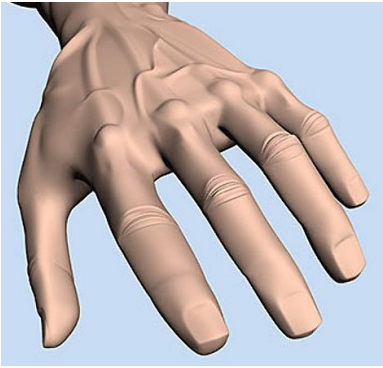
Gutiérrez-Doña (2015), International Conference, Flu-2015, 8-10 June, Chicago, USA

Figure 4. LISREL path diagram for T1-T2 (7 months time lag; $n = 71$).



$\chi^2 (95, n = 71) = 336, p = .00; \chi^2/df = 3.54; NFI = GFI = 0.91; CFI = 1.00; RMSEA = 0.10, 90\% CI for RMSEA (0.083; 0.12).$

Gutiérrez-Doña (2015), International Conference, Flu-2015, 8-10 June, Chicago, USA

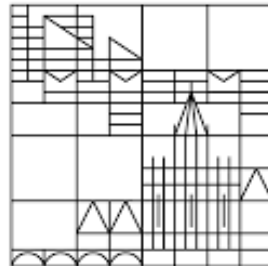


- **Costa Rican males ignored their own risks of getting A (H1N1)/seasonal influenza. It appears that they basically trusted their own capabilities to protect themselves against the virus by handwashing, irrespective of the level of risk.**
- **It is still unclear whether male participants did not trust risk information or whether they just simply perceived themselves as invulnerable.**
- **It seems that Costa Rican females did not adopt the handwashing behavior without previously having developed an intention to wash their hands.**
- **How do gender differences help us in educating people to adopt/maintain good handwashing habits?**

Acknowledgements

- Psychological Assessment and Health Psychology
Department of Psychology, University of Konstanz

Universität
Konstanz





CONTACT ME:

Dr. Benicio Gutiérrez-Doña, PhD
Universidad Estatal a Distancia, Costa Rica

beniciogd@uned.ac.cr