

A CONFIRMATORY FACTOR ANALYSIS TO VALIDATE A THEORETICAL
MODEL OF ECONOMIC SOLVENCY IN WOMEN REPORTING
INTIMATE PARTNER VIOLENCE
A DISSERTATION
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

BY

HEIDI E. GILROY, MSN, APHN-BC

DENTON, TEXAS

AUGUST, 2015

DEDICATION

I dedicate this to my family and friends who have demonstrated that I can always have people in my life that I can rely upon. Throughout this PhD program and the process of writing my dissertation, I have received all the love and support that I could ask for, and I thank you for that.

To my parents, John and Barbara Gilroy, thank you for raising me to value education. It has taken me far in life. Thank you for being excellent examples of hard workers and people of integrity. It has helped me succeed throughout my career as well as now. Also, thank you for your unconditional love and support. It is because of you that I am able to do this work.

To my sister Shannon Cook, my brother-in-law, Matt Cook, and nieces, Emily and Anne, I appreciate the joy and happiness you bring to my life. Thank you for believing in me and providing me much-needed distractions from my journey to finish the PhD program.

To my friends who have shown me love, patience, and understanding throughout this program, who are too many to name, I also dedicate this work to you. For all the important events I missed and time I was not able to spend with you, I hope you will be happy in knowing that the time I missed with you has been dedicated to making life better for women and children around the world.

Last but not least, I dedicate this work to the 300 women in the Mother Child Study. I have been following your lives and the lives of your children for almost 5 years. It has been an honor to watch you learn and grow through your experiences. I hope I have been able to do your stories justice through this work. Thank you for your willingness to share.

ACKNOWLEDGEMENT

I would like to acknowledge the help of colleagues who have contributed to the development this dissertation.

First, I would like to acknowledge Dr. Judith McFarlane, my committee chair and mentor. From the beginning, she has been generous with her time and knowledge. It has always been clear that her goal was to develop me as a competent and knowledgeable researcher. I cannot begin to thank her for all she has done for me. I hope to be able to do justice to her legacy as I continue this work.

I would also like to acknowledge Dr. Sandra Cesario, my committee member. I have known her since my undergraduate program TWU, and I have always appreciated her kindness and humor. She has gone out of her way to make sure that I have had what I needed to get through the PhD program, and I am grateful.

I would also like to acknowledge Dr. Nina Fredland, my committee member. She has always challenged me to improve as a researcher and as a professional. Without her help, I do not think I could have tackled such a challenging work as this.

I would also like to acknowledge Dr. Lene Symes, a professor at TWU. She was one of the first people that I met when I started my undergraduate program at TWU, and she was the one who helped me to write the definition which led to the development of the Theoretical Model of Economic Solvency in Women. She is a patient teacher, and I have learned a great deal from her over the years at TWU.

I would also like to acknowledge Dr. Angeles Nava, my colleague in the Mother Child Study and my friend. I am grateful for her assistance in collecting and thinking about the data. Most of all, I am grateful for her friendship. I could not have picked a better teammate for this journey.

I would also like to acknowledge John Maddoux, one of the statisticians for the Mother Child Study. This dissertation represents a great deal of work on his part. I could not have done it without him.

Finally, I would like to acknowledge all of the members of the Mother Child Study team who I have not yet mentioned, Dr. Brenda Binder, Dr. Anne Koci, Dr. Nora Montalvo, Dr. Fuqin Liu, and Dr. Rene Paulson. I have learned a tremendous amount from each of these people. Throughout my time on the research team, they have always treated me as a colleague, and this has given me the confidence to think outside of the box.

ABSTRACT

HEIDI GILROY

A CONFIRMATORY FACTOR ANALYSIS TO VALIDATE A THEORETICAL MODEL OF ECONOMIC SOLVENCY IN WOMEN REPORTING INTIMATE PARTNER VIOLENCE

AUGUST 2015

Poverty is a consistent risk factor for intimate partner violence against women. Intimate partner violence has been shown to be a risk factor for future economic hardship. This creates a cycle of poverty and violence that is difficult for many women to escape. Little is known about the economic state at which women are no longer at risk for intimate partner violence due to their economic status, which can be referred to as economic solvency. A Theoretical Model of Economic Solvency in Women has been developed from the literature that includes four factors: human capital, social capital, sustainable employment, and independence. The purpose of this research is to validate the model in a sample of women reporting intimate partner violence. This research is a secondary data analysis of 280 women who reported intimate partner violence and sought services to end the violence and were followed for 7-years post first reach out for services. Measures used in the 7-year study of women were selected that theoretically matched the four factors described in the Theoretical Model of Economic Solvency in Women. A confirmatory factor analysis was performed to test the goodness-of-fit of the measures chosen for the model. Measures used to test the model included education, poverty ratio, and employment, as well as questions about empowerment, problem

solving, self-efficacy, and economic hardship. Examination of the model yielded adequate fit with the obtained data, $\chi^2(90) = 228.89$; *adj.* $\chi^2 = 2.59$; RMSEA = .076; NNFI = .900; CFI = .918; SRMR = .080. These results indicate that the model is valid for use with women reporting intimate partner violence to explain the interconnections of human capital, social capital, sustainable employment, and independence as abused women's economic solvency. The Theoretical Model of Economic Solvency in Women is a first attempt at understanding the complex interaction of factors that make up the economic status of women who have experienced intimate partner violence. The validation of the model offers strength of association between constructs and can be used to plan interventions to improve economic solvency in abused women potentially to reduce violence.

TABLE OF CONTENTS

	Page
DEDICATION	iv
ACKNOWLEDGMENT.....	v
ABSTRACT.....	vii
LIST OF TABLES	xi
LIST OF FIGURES	xii
Chapter	
I. INTRODUCTION	1
Problem of Study/Statement of Purpose	2
Rationale for the Study.....	3
Theoretical Framework	4
Assumptions	6
Research Question	7
Definition of Terms	7
Human Capital.....	7
Social Capital	8
Sustainable Employment.....	9
Independence.....	9
Limitations.....	10
Summary	11
II. REVIEW OF LITERATURE.....	12
Search Methods	12
Human Capital.....	12
Social Capital	13
Sustainable Employment.....	14
Independence.....	14
Summary	15
III. PROCEDURES FOR COLLECTION AND TREATMENT OF DATA.....	16

Setting.....	16
Population and Sample.....	16
Protection of Human Subjects.....	17
Instruments.....	17
Human Capital Measures.....	18
Social Capital Measures.....	20
Independence Measures.....	21
Sustainable Employment Measures.....	22
Data Collection.....	23
Pilot Study.....	23
Treatment of Data.....	26
 IV. ANALYSIS OF DATA.....	 29
Description of the Sample.....	29
Findings.....	30
Summary of the Findings.....	33
 V. SUMMARY OF THE STUDY.....	 35
Summary.....	35
Discussion of the Findings.....	36
Conclusion and Implications.....	39
Recommendations for Further Study.....	45
 REFERENCES.....	 47
 APPENDICES	
A: Instruments.....	57
B: IRB Approval Letter.....	67
C: IRB Revision Letter.....	69

LIST OF TABLES

Table	Page
1. Parameters of the Measurement Model, Standardized Path Coefficient, t Values, Composite Reliability, Average Variance Extracted, and Highest Shared Variance: Pilot Study	25
2. Correlations between latent constructs: Pilot Study	33
3. Means and Standard Deviations of Continuous Demographics of Full Sample.....	30
4. Frequencies and Percentages of Categorical Demographics of Full Sample	30
5. Parameters of the Measurement Model, Standardized Path Coefficient, t Values, Composite Reliability, Average Variance Extracted, and Highest Shared Variance: Full Sample.....	32
6. Correlations Between Latent Constructs: Full Sample.....	33

LIST OF FIGURES

Figure	Page
1. Theoretical Model of Economic Solvency in Women within the Ecological Model of Human Development	7
2. Theoretical Model of Economic Solvency in Women with Instruments.....	15

CHAPTER I

INTRODUCTION

Intimate partner violence against women is a global health issue. It is a common health problem, with one in three women around the world experiencing intimate partner violence at some point in her life (World Health Organization, 2013). It is also a serious health problem, with large numbers of women experiencing intimate partner violence reporting injuries and other mental and physical health problems (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008).

Economic factors play a large role in the incidence of intimate partner violence. It can occur in families of all backgrounds; however, families with low income are at higher risk for incidents of violence. Studies from all over the world have indicated that family poverty is a risk factor for partner violence including studies from the United States (Breiding, Chen, & Black, 2014) Pakistan, (Ali, Asad, Mogren, & Krantz, 2011), and Vietnam (Vung, Ostergren, & Krantz, 2008). In addition to being a risk factor for intimate partner violence, poverty may also exacerbate some of the consequences of violence, such as decreased access to health care, which increases the challenge for abused women's recovery and wellbeing (Goodman, Smyth, Borges, & Singer, 2009). For example, a woman who is both poor and abused may have a harder time receiving the help she needs to recover from intimate partner violence (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). The woman reporting abuse may also have problems

securing and maintaining employment, usually due to the abuser's controlling behavior, which makes it difficult for her to decrease her risk of future violence due to poverty (Staggs & Riger, 2005; Romero, Chavkin, Wise, & Smith 2003). Also, a woman who is both poor and abused is at greater risk for mental health problems like depression (Chuang et al., 2013) or Post-Traumatic Stress Disorder (PTSD) (Rodriguez et al., 2008), which further compromise functioning and her ability to leave the violent relationship and exit poverty.

The links between poverty and intimate partner violence are well established in the literature. As poverty increases so does the likelihood of partner violence (Capaldi, Knoble, Shortt, & Kim, 2012). However, less is known about the economic state that a woman must reach in order to decrease her poverty-based risk of intimate partner violence and poor outcomes. Four major factors emerge in the literature as important factors in economic solvency: human capital, social capital, sustainable employment, and independence (Gilroy, Symes, & McFarlane, 2014). These factors form the Theoretical Model of Economic Solvency in Women, constructed by the author and form the central discourse of this research.

Problem of the Study/Statement of Purpose

Economic solvency may serve as a protective factor against future intimate partner violence for women who have experienced abuse; however, little is currently known about what factors make up economic solvency in abused women. Research is needed to identify factors that make up economic solvency so we can plan and evaluate

evidence-based interventions to increase economic solvency in abused women and thereby decrease the likelihood of poverty and abuse. Gaining a better theoretical understanding of the factors and how they relate to each other through the use of modeling (i.e., confirmatory factor analysis) is a first step toward this end.

Rationale for the Study

Decreasing the severity and frequency of intimate partner violence has long been a goal of public health workers all over the globe. Traditional methods of intervening in violence involve stopping the violence. For example, criminal justice systems work to arrest and prosecute the abuser to remove him from the situation. The safe shelter system works to house the woman in a safe place to remove her from the situation. If the woman remains poor, or economically insolvent, however, she remains at risk for future abuse. At this time, we do not have empirical evidence of factors that are most important in determining or measuring economic solvency, so it is difficult to plan and evaluate interventions to increase economic solvency and thereby decrease risk for future abuse. This study will use empirical data to validate a theoretical model of economic solvency in women, laying a theoretical foundation for future research on economic solvency in abused women and its effects on severity and frequency of violence, sequelae of violence, and intergenerational transmission of effects of violence.

Theoretical Framework

A modified version of the Ecological Model of Human Development (Bronfenbrenner, 1998) is used to guide this study. Bronfenbrenner asserts that human development is guided through continual interactions between the individual and people, objects, and symbols in the individual's environment. The interactions take place at the following levels: microsystem (intimate relations), mesosystem (interactions between microsystems), exosystem (institutions and social structure), and macrosystem (cultural attitudes and beliefs). The chronosystem, which represents the importance of timing in the effects of interactions on human development, is also included in the framework. The Ecological Model was adapted by Heise (1998) with four systems later described as the individual, relationships, community, and society. This is the model recommended by the World Health Organization (2012) for understanding intimate partner violence and its sequelae and was used for the current study.

Economic solvency in women is a result of continuous interactions between all levels of the adapted Ecological Model. Figure 1 overlays the four components of economic solvency within the Ecological Model of Human Development. This was taken into account during the formation of the theoretical model of economic solvency and the selection of measures used to test the model. The factors of economic solvency (human capital, social capital, sustainable employment, and independence) take place within the individual level of the ecological model, and, as illustrated in the ecological model, interactions between the individual, her relationships, community, and society, as well as the influence of time, affect a woman's economic solvency and its four factors (human

capital, social capital, sustainable employment, and independence). For example, a woman's ability to obtain sustainable employment may be affected by violence happening in the home (relationships), job prospects close to her (community), national policies affecting women's opportunities and equal pay in the job market (society), and the time period in which she began work (chronosystem). The Theoretical Model of Economic Solvency in Women, as described in this paper, acknowledges these interactions and their importance in economic outcomes for women who have experienced intimate partner violence.

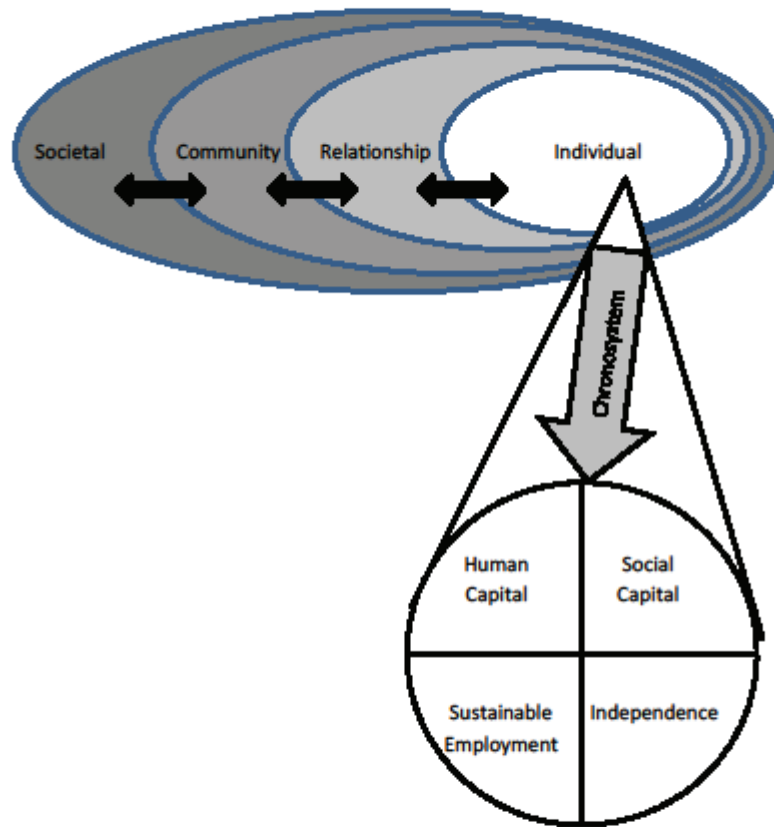


Figure 1: Theoretical Model of Economic Solvency in Women within the Ecological Model of Human Development

Assumptions

Assumptions of the Ecological Model of Human Development

1. Human development is influenced by interactions taking place continuously at multiple levels of the environment of the individual.
2. The individual has impact on her environment at the same time that the environment has impact on her.

3. Social structures, ranging from intimate relationships to greater society, play a role in the health and wellness of individuals.

Research Question

How well do measures of (1) human capital, (2) social capital, (3) sustainable employment, and (4) independence in women who report intimate partner abuse fit with the theorized model of economic solvency?

Definition of Terms

Human Capital

Conceptual definition: Human capital is defined as, “the sum of the acquired knowledge, skills, and attitudes an individual possesses” (Simmons et al. 2007, p. 638).

Operational definition: Using measures from the 7-year study (McFarlane et al., 2012), human capital was measured by self-reported education level, problem solving skills as measured by the Social Problem-Solving Inventory-Revised Short (S) (SPSI-R: S) (D’Zurilla, Nezu, & Maydeu-Olivares, 2002), empowerment as measured by the Personal Progress Scale-Revised (PPS-R) (Johnson, Worell, & Chandler, 2005), and the woman’s perceived self-efficacy as measured by the General Self-Efficacy scale (Schwarzer & Jerusalem, 1995).

For the SPSI-R: S, women rate their agreement with statements on a scale of 0 through 4. The statements are divided into five subscales: positive problem orientation, negative problem orientation, rational problem-solving, impulsivity/carelessness style, and avoidance style. An example of a statement to measure adaptive problem-solving is,

“After carrying out a solution to a problem, I try to evaluate as carefully as possible how much the situation has changed for the better.” An example of a statement to measure dysfunctional problem-solving is, “When my first efforts to solve a problem fail, I get very frustrated.” For each subscale, raw scores can range from 0 to 25.

For the PPS-R, women rate their agreement with statements on a scale of 1 to 7. Example statements are, “I have equal relationships with important others in my life,” and, “I do not feel competent to handle the situations that arise in my everyday life.” Some statements are reverse coded. The possible range of scores for the PPS-R are 28 through 196.

For the General Self-Efficacy Scale, women rate their agreement with statements on a four point scale. Example statements are, “It is easy for me to stick to my aims and accomplish my goals,” and, “I can remain calm when facing difficulties because I can rely on my coping abilities.” Scores for this instrument range from 10-40. This measure discussed in more detail in Chapter 3.

Social Capital

Conceptual definition: Social capital is the ability of a woman to access and use a network of individuals, with whom she has either a formal or informal relationship, for her welfare (Larance, & Porter 2004).

Operational definition: Using measures from the 7-year study (McFarlane et al., 2012), social capital is defined by a level of social support as measured by the Social Support tool (Norbeck, Lindsey, & Carrieri, 1981). Women are asked to give the names

of the three people who have been the most help to them in the previous four months and then answer questions with a score of 0 through 5 with 0 meaning not at all and 5 meaning a lot. Example questions are, “How much does (name of person) make you feel liked or loved?” and, “If you were confined to bed for several weeks, how much could (name of person) help you?” The possible range of scores for this measure are 0 through 72. Details of the measurement tool are explained in Chapter 3.

Sustainable Employment

Conceptual definition: Sustainable employment is defined as a paid position that provides sufficient income and benefits to provide for the woman and her family’s needs over time (Walker & Kellard, 2001).

Operational definition: Using measures from the 7-year study (McFarlane et al., 2012), sustainable employment is measured by the presence of a full-time position (35 hours a week or more) and benefits at the time of the time of the interview. Also, any employment at three separate time points in in the year prior to the interview.

Independence

Conceptual definition: Independence is defined as the means to earn sufficient income to meet family financial needs as well as decision-making power about finances (Ford-Gilboe et al., 2009).

Operational definition: Using measures from the 7-year study (McFarlane et al., 2012), independence is measured through the woman’s poverty ratio based on her income and number of individuals in the household and her ability to meet family needs as

measured by the Economic Hardship tool (Fragile Families, 2006). The Economic Hardship Tool was divided into two separate categories, Housing Instability and Economic Difficulties. An example of a question from the Housing Instability portion of the tool is, “Did you stay at a shelter, an abandoned building, an automobile, or any other place not meant for regular housing even for one night?” An example of a question from the Economic Difficulties section of the tool is, “Was there anyone in your household who needed to see a doctor or go to the hospital but couldn’t go because of the cost?” Possible scores for Housing Instability range from 0 to 4, and scores for Economic Difficulties range from 0 to 6. Poverty ratio is a calculation based on the US Department of Health and Human Services (2014) 2014 Poverty Guidelines. Details of the measurement tools are explained in Chapter 3.

Limitations

Data for this study is a secondary data analysis of data collected over a 7-year period about the outcomes of 300 abused women after they reached out for justice services through a District Attorney’s Office or sought safe shelter (McFarlane et al., 2012). Women who either did not seek help for intimate partner violence or who sought help in other places were excluded. The generalizability of the model validation may be affected by the limited nature of the sample. As a secondary data analysis, researchers were limited to information already given by the women. Other tools may exist that better measure the factors presented in the theoretical model. The measures were also self-report, which may introduce some recall bias into the data.

Summary

Intimate partner violence is a health problem that affects women all over the world, and economic factors have been linked to both risk for intimate partner violence and severity of outcomes. A proposed Theoretical Model of Economic Solvency in Women has been created from an analysis of the literature. This study will use empirical data from a seven year study of women who have reported intimate partner violence to test the validity of the model.

CHAPTER II

REVIEW OF LITERATURE

Search Methods

Data based including CINAHL, Genderwatch, Socindex, and Google Scholar were systematically searched to identify articles that describe economic solvency in abused women. Keywords in the search included various combinations of the following: economic solvency, economic self-sufficiency, financial autonomy, economic self-reliance, intimate partner violence, human capital, social capital, and employment. Articles were included in the review if they were peer-reviewed, published between 2004 and 2014, and had a section describing the terms of interest. In the first search, only articles that dealt directly with abused women were included. Because of the small number of such articles and because all women are at risk for intimate partner violence, the second search included articles that described the terms of interest in women.

Human Capital

Human capital includes knowledge, attitudes, and life skills the woman can use to address issues of daily living (Simmons, Braun, Wright, & Miller, 2007). Education is often cited as a factor in women' economic solvency (Zhan & Pandey, 2004; Scott, London, & Gross, 2007). Psychological strength, self-motivation, and life skills are other human capital factors identified as being important to economic solvency (Hong,

Sherriff, & Naeger, 2009). For example, a woman who has the knowledge to confront problems in her life and has the necessary self-confidence is more likely to be economically solvent.

Social Capital

Social capital includes the ability of a woman to access and use a network of individuals for her welfare (Larance, & Porter 2004). For example, a woman might seek help from informal social supports, such as staying at a friend's house for a few weeks. She may also use formal social support, such as accessing services at the mental health clinic. Social support is reported to be a predictor of economic wellbeing in women. The work of Kohler, Anderson, Oravec, & Braun (2004) found that the presence of a network of friends and family correlated with greater success in poor women who had experienced abuse.

Both availability and type of support are important variables in economic solvency. For example, social support can be emotional (i.e., having someone who offers love and respect), instrumental (i.e. helping the woman with a particular problem), tangible (i.e. providing a woman with the goods and services she needs), or informational (i.e. giving the woman advice) (Simmons, Braun, Wright, & Miller, 2007). Individuals providing social support, such as a friend or family member who is economically solvent, can also provide motivation and an example of economic solvency to low-income women (Hong, Sherriff, & Naeger, 2009). A woman needs social capital in order to make use of this network for economic solvency.

Sustainable Employment

Sustainable employment is a paid position that provides sufficient income and benefits to provide for the woman's needs over time (Walker & Kellard, 2001).

Employment itself, regardless the type, has been shown to positively correlate with economic solvency (Simmons, Dolan, & Braun, 2007). Several studies about economic solvency in women describe sustainable employment as a "good" job and precarious employment as a "bad job" (Johnson and Corcoran, 2003; Woodward, 2008), but the requisites for each are not well-defined in the literature. Woodward (2008) describes a good job as one that is pays more than the US minimum wage, provides opportunity for advancement, and provides benefits like health insurance. On the other hand, Evans (2007, pp 31) describes precarious employment as "temporary, part-time, providing irregular hours, low wages and few, if any, benefits." It is not clear from the literature how long a woman must be working at a position in order to reach economic solvency (Gilroy, Symes, & McFarlane, 2014).

Independence

Independence means access to her own or her family's funds and the means to earn income as well as decision-making power about finances (Ford-Gilboe et al., 2009). This requires a sufficient amount of income to meet her family's basic needs. In a qualitative study, women stated that economic solvency meant that they did not need to rely upon anyone, including friends, family, or community agencies, for financial support

(Scott, London, & Gross, 2007). Hong, Sherriff, and Naeger (2009) report similar findings.

Summary

To be truly economically solvent, women must achieve all of these factors, specifically human capital, social capital, sustainable employment, and independence (Gilroy, Symes, & McFarlane, 2014). There is evidence in the literature that the human capital, social capital, sustainable employment, and independence interact with each other in the lives of abused women. For example, Staggs et al (2007), found higher levels of social support predicted sustainable employment. In the same study, human capital factors, such as education and prior work skills and history, were linked to emotional and tangible social support. Inability to meet family needs with economic resources, or lack of independence, correlates with problem-solving abilities and skills (Goodman, Smyth, Borges, & Singer, 2009). At this point, no study could be identified that measured all four factors (human capital, social capital, sustainable employment, and independence) or their correlation with each other.

CHAPTER III

PROCEDURES FOR COLLECTION AND TREATMENT OF DATA

This is a secondary data analysis from an ongoing seven year prospective study of women who sought help for intimate partner violence at either the District Attorney's Office for Protection Orders or at a safe shelter (McFarlane et al., 2012). The study is a prospective cohort design is followed with repeated measures every four months for seven years. The analysis described in this paper used data from both groups, women recruited at the District Attorney's Office and women recruited at a safe shelter.

Setting

The study takes place in a large city. Half of the women in the study (n=150) were recruited from battered women's shelters, and half (n=150) were recruited from the District Attorney's Office as they were applying for Protection Orders.

Population and Sample

Women were eligible for the study if they were seeking services at either the District Attorney's Office for a Protection Order or a battered women's shelter for the first time, had experienced intimate partner violence, were at least 18 years old, had at least one child between the ages of 18 months and 15 years living with her at least 50% of the time, and spoke English or Spanish. A total of 300 women agreed to participate in the study. At the time of data extraction for this research, 94% of the women were

retained, with 3% of the women lost to follow-up and 3% withdrew voluntarily from participation.

Protection of Human Subjects

Approval for the secondary data analysis study was obtained from the Institutional Review Board (IRB) of Texas Woman’s University.

Instruments

Instruments were selected from the seven year study that best fit with the factors in the Theoretical Model of Economic Solvency in Women: human capital, social capital, sustainable employment, and independence. See Figure 2 for a visualization of the instruments used in each measure.

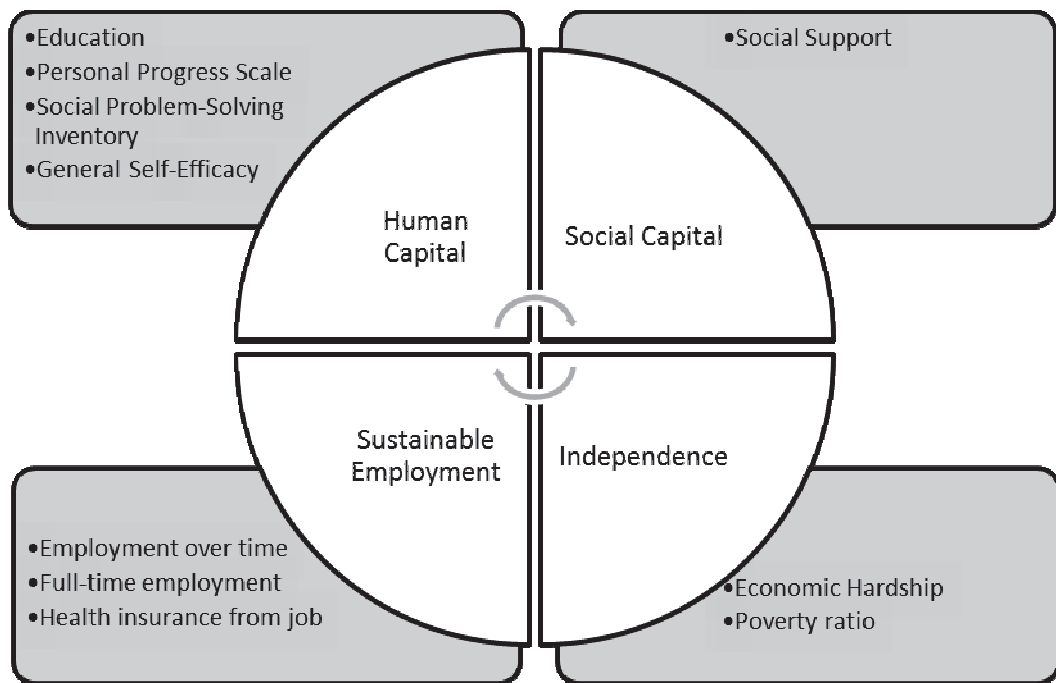


Figure 2: Theoretical Model of Economic Solvency in Women with instruments

Human Capital Measures

Personal Progress Scale-Revised. The Personal Progress Scale-Revised (PPS-R) is a 28-item instrument measuring empowerment in women (Johnson, Worell, & Chandler, 2005). The original Personal Progress Scale was based on the four principles of the Empowerment Model. The revision focused on making the questions more accessible to diverse populations and removing questions that were not strongly correlated with the other questions in the pilot study. Respondents rate their agreement with statements on a scale of 1 to 7 (1 = almost never true, 2 and 3 = usually not true, 4 = sometimes true, 5 and 6 = frequently true, and 7 = almost always true. Statements include, “I am feeling in control of my life,” and, “It is difficult for me to be assertive with others when I need to be.” Certain items are reverse scored, and the sum is used to determine the woman’s level of empowerment. Reliability and validity was tested with a sample of 222 women recruited from graduate and undergraduate university classes, local community health centers, a spouse abuse center, a rape crisis center, a university counseling center, and a training facility for advanced counseling psychology students. Reliability was excellent ($\alpha=.88$). In the 7 year study, the coefficient alpha was .85.

Social Problem-Solving Inventory-Revised. The Social Problem-Solving Inventory-Revised Short (S) (SPSI-R: S) (D’Zurilla, Nezu, & Maydeu-Olivares, 2002) is derived from the longer 70 item Social Problem Solving Inventory. The SPSI-R: S is designed to assess problem solving for everyday situations. The 25 item tool includes five subscales that are either adaptive or dysfunctional problem solving: positive

problem orientation, negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style. An example of a question to measure adaptive problem solving is, “After carrying out a solution to a problem, I try to evaluate as carefully as possible how much the situation has changed for the better. An example of dysfunctional problem solving is, “When my first efforts to solve a problem fail, I get very frustrated”. Higher scores indicate better functioning in problem solving. For each item, the woman responds using a 5-point scale to indicate how true each statement is for her (0=not at all true, 1=slightly true, 2=moderately true, 3=very true, 4=extremely true).

Reliability and validity of the SPSI-R: Short form (S) was tested with a sample of 601 college students of various racial and ethnic backgrounds (Maydeau-Plivares & D’Zurilla, 1996). Test-retest reliability ranged from .68-.85 among the sub-scales. Internal consistency ranged from .80 to .95 among sub-scales. Structural and predictive validity of the SPSI-R: S were tested with results indicating goodness-of-fit (RMSEA = .053, RMSR = .049, AGFI = .89, RNI = .91) and correlations with related measures similar to the SPSI-R:L (longer 52-item form). Reliability and validity has also been tested in populations with mental illness (D’Zurilla, Chang, Nottingham, & Faccini, 1998). In this study, reliability for the SPSI-R: S was good ($\alpha = .80$) for all items.

Across subscales, observed reliability was adequate ranging from .70 to .83 among sub-scales. The form takes approximately ten minutes to complete. Coefficient alpha for the 7-year study was .81 for positive problem solving, .82 for negative problem solving, .74

for rational problem solving, .72 for impulsive problem solving, and .68 for avoidant problem solving.

General Self-Efficacy. General self-efficacy is a 10-item instrument was created to assess a general sense of perceived self-efficacy with the aim to predict coping and adaptation after stressful life events (Schwarzer & Jerusalem, 1995). Responses to each item are made on a 4-point scale: 1 = *not at all true*, 2 = *hardly true*, 3 = *moderately true*, 4 = *exactly true*. An example of an item is “I am confident that I could deal efficiently with unexpected events.” Responses are summed. The possible range of scores is 10 to 40. Criterion related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions and negative coefficients were found with depression, anxiety, and somatization. In samples from 23 countries, Cronbach’s alphas ranged from .76 to .90, with the majority in the high .80s (Schwarzer & Jerusalem, 1995). For the 7-year study coefficient alpha was .86.

Social Capital Measures

Norbeck Social Support Inventory. The Norbeck Social Support Inventory is a six-item instrument measures multiple components of social support, including functional properties of social support (e.g., emotional and tangible support) and network properties (e.g., stability of relationships, frequency of contact), as well as the amount of support from specific sources (e.g., relatives, friends; Norbeck, Lindsey, & Carrieri, 1981, 1983). Respondents are asked to list first names or initials for each significant person in their lives who provides personal support to them. Respondents indicate the kind of

relationship for each person on this network list by use a 5-point rating scale to describe the amount of support available from each person with 0 = *no support*, 1 = *a little support*, 2 = *moderate support*, 3 = *quite a bit of support*, and 4 = *a lot of support*. Example of a question is “If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could (name of person) help?” Construct and concurrent validity are established on samples of employed adults ranging in age from 22 to 67 and internal consistency established with Pearson correlations (Norbeck et al., 1981, 1983). The instrument was revised to the present form in 1995 (Norbeck, 1995). For the purposes of this study, respondents are asked for the initials of their three primary sources of support. An extra question follows the Norbeck standard questions that ask if the abused woman has shared the violence with this individual. The coefficient alpha for the 7 year study was .83

Independence Measures

Economic Hardship. Economic Hardship is a 10-item tool is derived from the “Basic Needs – Ability to Meet Expenses” section of the Survey on Income and Program Participation (SIPP) (US Census Bureau, 2014), the Social Indicators Survey (Columbia University, n.d.), and the Study of Work, Welfare, and Family Well-Being of Iowa Families on FIP (Sing, Hill, & Mendenko, 2001).). Participants answer yes or no to questions about their ability to pay for basic household needs such as housing, food, and healthcare. A yes answer to any question indicates economic hardship (Fragile Families, 2006).

Poverty Ratio. Poverty ratio is a calculation based on the US Department of Health and Human Services (2014) 2014 Poverty Guidelines. The woman reports her income from formal employment (for example, as a cashier at a department store or as a teacher) and from informal employment (for example, as a babysitter or from selling food or crafts she has made). Her total income from formal and informal sources is divided by the Federal Poverty Limit for a household with the same number of people as the woman reports.

Sustainable Employment Measures

Sustainable employment was determined by a series of demographic questions. Women were asked at the one time point in the study whether or not they were employed and how many hours they worked a week. For the first measure of sustainable employment, dummy codes were used to indicate which women had full-time employment (greater than 35 hours a week) and which women did not. Another question asked whether women received health insurance from their job as a proxy for employment-related benefits. Finally, employment over time was calculated by the presence of employment in the three interviews one year preceding the time point where full time employment was ascertained. Range of scores for this measure were 0 through 3, with zero indicating employment at none of the three time points and 3 indicating employment at all three time points.

Data Collection

The current study is a secondary data analysis of the Mother Child Study to Inform Practice and Policy: A Seven Year Prospective Study (McFarlane et al., 2012). The primary investigator identified instruments within the larger study that best matched the theoretical model. The corresponding data was extracted from the larger data set and analyzed.

Pilot Study

The pilot study was conducted on a subset of the sample (n=205). A confirmatory factor analysis was performed using data from demographic data and the following instruments: General Self-Efficacy, Social Problem Solving Inventory, Revised, Koci Marginality Index, Social Support, and Economic Hardship.

To validate the goodness of fit between the hypothesized model the data obtained from this sample was assessed by the statistical processes of the Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), which is the equivalent to the Non-normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI), were used (See Table 1). According to Hu and Bentler (1999), the maximum cutoff values for the SRMR to be .08. The maximum cutoff for RMSEA is .08 according to Browne and Cudeck (1993). The minimum cutoff value for the NNFI and the CFI is .90 in order to conclude a good fit between the model and the data. Examination of the full measurement model yielded adequate fit with the obtained

data, $\chi^2(258) = 386.39$; *adj.* $\chi^2 = 1.50$; RMSEA = .049; NNFI = .928; CFI = .938; SRMR = .080.

In addition to measures of fit, the measurement model also computes path coefficients to describe the relative strength of each indicator on each corresponding latent construct. The relationship between each indicator and the latent construct is tested for significance. All indicators were significant ($\alpha < .05$) except for marginality and the presence of overtime or a second job (See Table 1).

Composite reliabilities were adequate for all constructs, ranging from .628 to .760. Composite reliabilities above 0.6 are acceptable. AVEs across measures ranged from .154 (Independence) to .565 (Social Capital). These values were generally lower than the recommended cut off of .500, indicating that within each construct there were individual indicators that may not account for a strong amount of variance in the latent construct, indicating further revision of measures within factors may be necessary to strengthen the measurement of human capital, sustainable employment, and independence. For the purposes of this analysis, however, all indicators were retained in the final measurement model.

Table 1

Parameters of the Measurement Model, Standardized Path Coefficient, t Values, Composite Reliability, Average Variance Extracted, and Highest Shared Variance: Pilot Study

	Human Capital Path	Social Capital Path	Sustainable Employment Path	Independence Path
Education	.09 *			
Positive Problem Solving	.69 *			
Negative Problem Solving	-.76 *			
Rational Problem Solving	.48 *			
Impulsive Problem Solving	-.55 *			
Avoidance Problem Solving	-.51 *			
General Self-Efficacy	.74 *			
Emotional Support		.57 *		
Tangible Support		.49 *		
Functional Support		.98 *		
Abuse-Related Support		.86 *		
Employed 28 Mo			.77 *	
Employed 32 Mo			.89 *	
Employed 40 Mo			-.15 ^m	
Medical Insurance			.44 *	
Free food or meals				.28 *
Not pay rent/mortgage in full				.37 *
Evicted				.45 *
Not pay utilities in full				.35 *
Borrow money				.49 *
Move in with others				.46 *
Stay in non-regular housing				.39 *
Skip medical care due to cost				.48 *
Cut back on buy clothes				.38 *
Worked overtime or second job				.13 ^m
Composite Reliability	.760	.828	.678	.628
AVE	.343	.565	.400	.154
HSV	.229	.019	.031	.229

Note. Measurement Model $\chi^2(258) = 386.39$; *adj.* $\chi^2 = 1.50$; RMSEA = .049; NNFI = .928; CFI = .938; SRMR = .080; AVE = average variance explained; HSV = highest shared variance; in each conceptual factor, one of the unstandardized paths was constrained to 1.0, meaning no t-value is produced for that indicator, * $p < .05$; ^m $p < .10$

Table 2

Correlations Between Latent Constructs: Pilot Study

	Human Capital	Social Capital	Sustainable Employment	Independence
Social Capital	.138			
Sustainable Employment	.097	.059		
Independence	-.479	.011	-.176	

Treatment of Data

For the final analysis, a confirmatory factor analysis (CFA) was conducted using LISREL 9.1. CFA utilizes a maximum likelihood estimation method in order to test the goodness of fit between a theorized measurement model and a dataset. When conducting the CFAs a constraint value of 1 was placed on one measured variable for each latent construct. This type of constraint is commonly used in modeling analyses that contain items with a defined scale, which is the case for the present study. Prior to conducting the CFA on the full measurement models, separate CFAs were conducted on each subscale (e.g., Human Capital, Social Capital, Sustainable Employment, Independence). The error variance of strongly related items was allowed to correlate within a latent construct, to reduce the impact of multicollinearity.

To validate the goodness of fit between the hypothesized model, defined as the four components of economic solvency derived from the literature, human capital, social capital, sustainable employment, and independence, the select data obtained from this sample was assessed by the statistical processes of the Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), which is the equivalent to the Non-normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI), were used. These measures are different ways of mathematically determining if the model reflects the data. Using more than one test allows researchers to catch possible weaknesses in the model.

In addition to measures of fit, the measurement model also computes path coefficients to describe the relative strength of each indicator on each corresponding latent construct. The relationship between each indicator and the latent construct is tested for significance. Reliabilities of the measures were assessed by examining the individual composite reliabilities, which is the method to measure internal consistency of a measure. This was done using the suggested procedure of Fornell and Larker (1981). Additionally, as also suggested by Fornell and Larker, average variance extracted (AVE) values were calculated for each construct to test discriminant validity.

In order to establish the most parsimonious measurement model, select items were reverse coded conceptually to ensure all items within a latent correlated in a positive direction. Additionally, items that correlated strongly across latent constructs were

tested in both constructs, and the model with the best overall fit was retained.

Specifically, this included moving empowerment from social capital to human capital.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to validate the Theoretical Model of Economic Solvency in Women with data from a sample of women reporting intimate partner violence. Factors in the theoretical model include human capital, social capital, sustainable employment, and independence. A Confirmatory Factor Analysis was used to test the model and the individual factors using SPSS and LISREL. The results of the analysis are described in this chapter.

Description of the Sample

A total of 280 women were included in the analysis. The mean age of the women was 30.7 years (SD=7.61). As their highest level of education, 32.9% of the women reported less than high school, 19.3% high school, 42.1% some college, and 5.7% college degree or higher. More than half of the women identified themselves as being Hispanic (57.5%). Additionally, 25.2% of women identified themselves as Black, 10.8% White, 0.3% American Indian/Native Alaskan, 4.5% Bi/Multi-racial, and 1.4% Asian or Pacific Islander. See Table 1 and 2 for a description of the sample. All women reported intimate partner violence at entry into the study.

Table 3

Means and Standard Deviations of Continuous Demographics of Full Sample

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Age of woman	280	30.70	7.61	18.00	52.00
Child Age (Years)	278	6.87	4.22	1.50	16.42
Months in Relationship	280	86.33	68.84	0.00	432.00
People living in Household	280	4.29	1.70	1.00	12.00

Table 4

Frequencies and Percentages of Categorical Demographics of Full Sample

	n	%
Education		
Less than High School	92	32.9
High School/GED	54	19.3
Some College	119	42.1
College Degree or Higher	16	5.7
Race/Ethnicity		
Hispanic	161	57.5
Non-Hispanic	119	42.5

Findings

The goodness of fit between the hypothesized model and the data obtained from this sample was assessed by the Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), which is the equivalent to the Non-normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI),

see Table 5. According to Hu and Bentler (1999), the maximum cutoff values for the SRMR to be .08. The maximum cutoff for RMSEA is .08 according to Browne and Cudeck (1993). The minimum cutoff value for the NNFI and the CFI is .90 in order to conclude a good fit between the model and the data. Examination of the full measurement model yielded adequate fit with the obtained data, $\chi^2(90) = 228.89$; *adj.* $\chi^2 = 2.59$; RMSEA = .076; NNFI = .900; CFI = .918; SRMR = .080.

In addition to measures of fit, the measurement model also computes path coefficients to describe the relative strength of each indicator on each corresponding latent construct. The relationship between each indicator and the latent construct is tested for significance. Path coefficients and significance values are also shown in Table 5.

Reliabilities of the measures used were assessed by examining the individual composite reliabilities using the suggested procedure of Fornell and Larcker (1981), see Table 5. Additionally, as also suggested by Fornell and Larcker, average variance explained (AVE) values were calculated for each construct, also shown in Table 5. Composite reliabilities were in the good range for Human Capital, Social Capital, and Sustainable employment, .859, .881, and .758 respectively and in the acceptable range for independence (.609). Average variance extracted across all measures approached or surpassed the critical value of .500, and ranged from .426 (Independence) to .788 (Social Capital)

Table 5. Parameters of the Measurement Model, Standardized Path Coefficient, T Values, Composite Reliability, Average Variance Extracted, and Highest Shared Variance: Full Sample

	Human Capital Path	Social Capital Path	Sustainable Employment Path	Independence Path
Empowerment	.68 *			
Education	.23 *			
Impulsive Problem Solving (RC)	.70 *			
Avoidance Problem Solving (RC)	.63 *			
Negative Problem Solving (RC)	.83 *			
Positive Problem Solving	.49 *			
Rational Problem Solving	.27 *			
General Self-Efficacy	.43 *			
Emotional Support		.96 *		
Tangible Support		.82 *		
Insurance from Work			.51 *	
Sustained Employment			.66 *	
Fulltime Employment			.78 *	
Housing Insecurity (RC)				.22 ^m
Economic Difficulties (RC)				.16 *
Income to Poverty Ratio				.68 *
Composite Reliability	.859	.881	.758	.609
AVE	.464	.788	.519	.426
HSV	.052	.052	.271	.271

Note. Measurement Model $\chi^2(90) = 228.89$; *adj.* $\chi^2 = 2.59$; RMSEA = .076; NNFI = .900; CFI = .918; SRMR = .080; AVE = average variance explained; HSV = highest shared variance; RC = reverse coded; in each conceptual factor, one of the unstandardized paths was constrained to 1.0, meaning no t-value is produced for that indicator, * $p < .05$; ^m $p < .10$

Discriminant validity was also examined according to the procedures of Fornell and Larker (1981). Across all latent constructs, the highest shared variance (HSV) was lower than the AVE of each construct, indicating adequate discriminant validity for each construct in the model based on the criteria set forth by Fornell and Larker. Lastly, correlations among latent constructs are presented in Table 6, which further indicate independence between latent constructs.

Table 6

Correlations Between Latent Constructs

	Human Capital	Social Capital	Sustainable Employment
Social Capital	.229		
Sustainable Employment	.116	.045	
Independence	.066	.027	.521

Summary of the Findings

The purpose of this study was to test if the Theoretical Model of Economic Solvency could be validated with data from 280 women that had reported intimate partner violence in the past. As a whole, the data was a good fit for the model. Across four measures of goodness of fit, the analysis demonstrated that the model is valid for use with women reporting intimate partner violence.

There were mixed results in the analysis of individual factors within the model. Three of the four factors (human capital, social capital, and sustainable employment) demonstrated good composite reliability, indicating that the measures used in each of

these factors are consistent with one another. The independence measure demonstrated acceptable composite reliability, indicating a weaker relationship between measures than those in the other three factors; however, consistency is still demonstrated. The correlation of one of the measures within the independence factor, housing insecurity, was not statistically significant in this sample of women. This may have weakened the composite reliability; however, it was retained because of its theoretical importance in the model. It may prove significant in other populations.

Two of the factors (social capital and sustainable employment) met the critical cutoff of .500 for average variance extracted, indicating that a greater amount of variance is explained by the construct than measurement error. Two of the (human capital and independence) were just below the cutoff, likely indicating some of the individual measures in the factor are not contributing strongly to the total variance. Further revision of the measures may be necessary to strengthen the measurement of these factors.

CHAPTER V

SUMMARY OF THE STUDY

There is a great deal of evidence in the literature that poverty is a risk factor for intimate partner violence. There is also evidence of a cyclical relationship between poverty and intimate partner violence, with abused women having greater risk for poverty. In order to stop the cycle of poverty and abuse, it is necessary to address both issues. At this point, however, very little is known about the economic state that a woman must achieve in order to effectively decrease her risk of intimate partner violence related to poverty, which can be referred to as economic solvency. This study is an initial attempt to describe and validate the Model of Economic Solvency in Women in women who have reported intimate partner violence for use in future research and interventions.

Summary

This study used data from 280 women who reported abuse to test the validity of the Theoretical Model of Economic Solvency in Women. As a secondary data analysis, measures were selected from the 7-year study (McFarlane et al., 2012) that were most closely associated with the conceptual definitions of each of the four factors of the model: human capital, social capital, sustainable employment, and independence. Confirmatory Factor Analysis was used to test the fit of the data with the model. Results from this

study indicate that the Theoretical Model of Economic Solvency in Women is valid for use with diverse women who report intimate partner violence.

Discussion of the Findings

Economic solvency has been defined as “a long-term state that occurs when there is societal structure that supports gender equity and external resources are available and can be used by a woman who has necessary human capital, sustainable employment and independence.” (Gilroy, Symes, & McFarlane, 2014), From this definition, the Theoretical Model of Economic Solvency was developed with four key factors that take place at the individual level of the Socio-Ecological Model, human capital, social capital, sustainable employment, and independence. The findings from this study confirm the four-factor Model of Economic Solvency in Women for women who report intimate partner violence.

The validation of the Theoretical Model of Economic Solvency in Women endorses the fact that economic solvency of women who report intimate partner violence is linked to measures of human and social capital, sustainable employment, and independence. Previous research has shown indirect links between intimate partner violence and future economic hardship. For example, research by Adams et al., (2012) showed that economic hardship after intimate partner violence was only partially mediated by job instability, the opposite of sustainable employment, indicating the presence of other factors influencing economic solvency. This research suggests these factors may be human capital, social capital, and independence. Research has

demonstrated that the link between intimate partner violence and future economic hardship is complex and multi-factorial. A review of the literature by Goodman et al. (2009), found that poverty following intimate partner violence stemmed from many sources, including abuser behavior and mental health problems, which may directly or indirectly affect all four of the factors of economic solvency described in the model. Housing insecurity following intimate partner violence, a part of the independence factor of the model, was also identified as increasing risk for poverty following intimate partner violence (Goodman et al., 2009).

Previous research has also indicated that poverty is a risk factor for future abuse (World Health Organization, 2002). However, a study by Dalal (2011) in India found that the poorest of women living in poverty did not have increased risk for intimate partner violence, while the most educated women did have increased risk when compared to other groups. These findings confirm a previous study done in South Africa (Jewkes, Levin, & Penn-Kekana, 2002). Both authors discuss the role of patriarchy in the disparate findings, with women with greater education or income than their partners threatening the socially acceptable power structure in the home. Jewkes et al. (2002) also mention the possibility of extreme poverty reducing finance-related conflict in the home, especially if the family is being supported by a third party. The findings in this study, as well as the previous research mentioned, confirm the need for a more holistic view of economic solvency and its relationship to intimate partner violence as is presented in Theoretical Model of Economic Solvency in Women. For example, it may be that the

extremely poor women in the study by Jewkes (2002) who had some protection against intimate partner violence had a level of social capital that increased their total level of economic solvency compared to other women as evidenced by the third-party financial support. This could be confirmed with research using the Theoretical Model of Economic Solvency in Women.

In addition to providing context for understanding the relationship between intimate partner violence and economic factors at the individual level, the Theoretical Model of Economic Solvency in Women also provides us the opportunity to view the relationship in the larger context of the Socio-Ecological Model. Interactions at the relationship, community, and societal level have been shown to affect a woman's risk for both intimate partner violence and poverty. The best known adaptation of the Socio-Ecological Model done by Heise (1998) gives several examples of economically-based risk factors for intimate partner violence, including male control of wealth at the relationship level, a threat to independence, and unemployment at the community level, a threat to sustainable employment.

More recent research confirms the importance of these interactions. At the relationship level, there is evidence that abuser behavior, such as work sabotage and economic exploitation (Postmus et al., 2011), and consequences of violence, such as poor mental and physical health (Banyard, Potter, & Turner, 2011) can put a woman at risk for economic problems. At the community level, there is some evidence that neighborhood disadvantage plays a role in risk for violence (Fox & Benson, 2006). Research on

societal norms and policies and their effects on economic factors related to intimate partner violence is lacking; however, the woman's role in society has long been thought to be related to both economic solvency and violence (Heise, 1998).

While this research did not specifically test interactions at the relationship, community, and society level, it does give us the ability to more closely examine the effects of those interactions on women's economic solvency and related risk for intimate partner violence. Certainly, research has been done on the effects of violence at the relationship level on sustainable employment and independence (Postmus et al., 2011); however, little research exists on its effects on human capital and social capital. No research exists on the effects of intimate partner violence on all four factors simultaneously. This research, however, supports the notion that we need to know how interactions at all levels of the Socio-Ecological model affect social capital, human capital, sustainable employment, and independence, as well as economic solvency as a whole in order to better plan interventions for women who have experienced intimate partner violence.

Conclusion and Implications

At present, many of the interventions for women reporting intimate partner violence address one aspect of the problem, specifically safety and the reduction of the likelihood of further abuse. As has been previously discussed, criminal justice services and safe shelters provide women the opportunity to escape the violence. Some advocacy interventions also address one or two of the factors in the Theoretical Model of Economic

Solvency in Women. For example, one advocacy intervention described by Bybee and Sullivan (2005) addressed sheltered women's issues with social capital, specifically their ability to access social support and community resources. Another example is a study of micro-finance in Bangladesh that was mainly designed to increase human capital in women, in addition to providing financial support (Ahmed, 2005). In the Bybee and Sullivan study (2005), there were initial benefits of decreased abuse shown after the advocacy intervention, but these benefits were not lasting. In the Ahmed (2005) micro-finance intervention, there was an initial increase in violence followed by no difference in risk for violence between intervention and non-intervention groups. In general, proof of lasting positive results from intimate partner violence interventions is lacking in the literature (Stover, Meadows, & Kaufman, 2009) and may be explained by single construct interventions, such as use of social support and advocacy alone (Sullivan, 2005) or microfinance alone (Ahmed, 2005). Using the Theoretical Model of Economic Solvency in Women, validated direction is offered for the necessity of multiple interventions that address enhancement of human and social capital as well as sustainable employment and independence simultaneously.

A multi-prong program addressing the complex interconnections of abused women's economic solvency might include school-based programs as suggested by Garcia-Moreno et al. (2014). Past school-based programs to address adolescent dating violence have shown some promise in certain behaviors, such as condom use (Wolfe et al., 2009). Future primary prevention interventions for school-age children may include

not only healthy relationship education but also interventions targeting future economic solvency in school-age girls in all four areas, social capital, human capital, sustainable employment, and independence.

Healthcare providers are likely the best suited actors for tertiary prevention interventions using the Theoretical Model of Economic Solvency in Women. Michau et al (2014, pp 5), state about healthcare providers, “because of their key positioning for detection and ability to provide often-vital care, health staff have an essential role in a holistic approach.” Health care providers may see a woman who has experienced intimate partner violence over a long period of time and be able to offer immediate referral to services that address economic solvency as well as monitoring use and efficacy of services over time. The efficacy of healthcare interventions would likely be strengthened by the “one-stop center” approach, with a variety of services for women reporting intimate partner violence accessible from one location within a hospital or a stand-alone facility (Ellsberg et al., 2014).

At present there are some examples of multi-prong programs for women who have experienced intimate partner violence occurring in developing countries. Many of these are microfinance programs based on the Grameen Model. The idea behind the Grameen Model was to make banking and loans accessible to people living in extreme poverty in order to improve their lives and health. At first, they tried simply lending to the poor, but this was not effective as many of the individuals who received loans did not pay them back. As a result, a model was developed which incorporated other factors of

human development, such as social capital (Auwal, 1996; Hulme, 2008). The focus of Grameen Model-based interventions is problem-solving, empowerment, and social support, which are all measures used in this research to validate the Model of Economic Solvency in Women. An example of a program that follows this model is the IMAGE program in South Africa (Kim et al. 2007). This program involves job training and health education (human capital), group-based credit (social capital), and microfinance (independence). One of the goals of the project is to allow the women to create their own sustainable business (sustainable employment). A randomized-control trial of the intervention indicated a decrease in risk for violence (Kim et al., 2007). The current research supports attention not only to the provision of resources but also the human development, specifically in human capital, social capital, sustainable employment, and independence, which has been found to be important in programs, such as those based on the Grameen Model. In developing countries, this may take the form of multi-prong microfinance programs, such as the IMAGE program. In developed countries, where there may be more barriers to microcredit than in developing countries (Bhatt & Tang, 2001), it may involve a multi-prong school-based program that teaches vocational skills to adolescent girls through team-learning.

The introduction of the Theoretical Model of Economic Solvency in Women and its validation in this study offer evidence as to why solo interventions are not optimum and cannot yield successful sustainable outcomes. The correlations between the factors of the model are an indication of a need for a broader focus for interventions related to

intimate partner violence at all levels of the Socio-Ecological framework (relationships, community, and society) (Garcia-Moreno et al., 2014) . Working at the individual and relationship level, interventions should focus on strengthening all four factors simultaneously, such as the examples offered above (school-based programs or health sector programs), rather than working on one factor, such as education (i.e., high school completion programs or English as a second language) (human capital) or advocacy and peer support programs (social capital) interventions or job placement programs (sustainable employment) or microfinance (independence). In addition, they should focus on limiting the intrusion of effects of intimate partner violence, such as further harassment and abuse from the current or former partner and long-term physical and mental health consequences of abuse, which can affect human capital, social capital, sustainable employment, and independence (Ford-Gilboe, Wuest, & Merritt-Gray, 2005).

At the community and societal level, interventions should focus on increasing the equity of women in the job market as well as in society in general. There is evidence that high-level policy commitment can make a difference in the rates of intimate partner violence. For example, rates of intimate partner violence against women decreased 53% and intimate partner homicides of women decreased 26% from 1993 to 2008 after the passage of the Violence Against Women Act (VAWA) (Modi, Palmer, & Armstrong, 2014). While it is likely that there were other factors that influenced the decrease, enacting laws like VAWA that can focus on increasing economic solvency in women will likely bring about more positive change in intimate partner violence statistics. Gender

equity is an important part of economic solvency for women (Gilroy, Symes, & McFarlane, 2014) and often complicates the relationship between economic factor and intimate partner violence (Dalal, 2012). Gender-inequitable norms, low social and economic status of women, and lack of women's civil rights were all cited by the World Health Organization (2012) as community and societal factors that increase risk intimate partner violence around the globe. Similar factors create economic hardship for women compared to men (Chen et al., 2005). These interventions should take into account the holistic view of economic health of women provided by the Theoretical Model of Economic Solvency in Women.

Nurses, especially public health nurses, are uniquely positioned to work on interventions to improve economic solvency for women reporting intimate partner violence. We know that women who experience intimate partner violence tend to utilize healthcare services more often than non-abused women (Rivera et al., 2007), meaning they likely interact with nurses more often. Moreover, current recommendations for screening all women of childbearing age for intimate partner violence by the US Preventive Services Task Force (Moyer, 2013) is likely to increase the identification of abused women by nurses and other healthcare professionals. The nurse's focus on health as part of the whole person as well as the nurse's role as an advocate make her well-qualified to plan interventions that affect the holistic view of economic solvency described by the Theoretical Model.

Recommendations for Further Study

There is substantial research indicating that poverty is a risk factor for intimate partner violence; however, learning more about how economic empowerment, or economic solvency, protects women from violence across the globe has been complicated by the wide variety of tools used to measure it (Vyas & Watts, 2009). Research is underway to determine if women reporting abuse in the 7-year study (McFarlane et al., 2012) who have higher economic solvency, as measured by the instruments used in this study, report decreased levels of partner violence over time. This information may provide evidence that higher economic solvency does, in fact, serve as a protective factor for women who have already experienced violence and serve as a tertiary outcome measure in the future.

The Theoretical Model may also help in better understanding the effects of intimate partner violence on a woman's economic solvency over time. Do certain types of violence, such as sexual abuse, affect economic solvency differently than other type of abuse, such as physical abuse or threats of abuse or stalking? Does severity or chronicity of violence affect the severity and chronicity of economic problems in women? Research developed to answer these questions and others will help us to target interventions for women at greatest risk both for violence and for economic problems.

Finally, the Theoretical Model of Economic Solvency in Women must be validated in non-abused women in order to test the poverty/abuse reciprocal theory, and longitudinal studies are needed to test the hypothesis that economic solvency can be

protective against intimate partner violence in women who have never been abused. To consider women as holistic persons, a holistic model is required. The Theoretical Model of Economic Solvency in Women is a step toward more comprehensive attention to abused women's recovery and enhanced wellbeing.

REFERENCES

- Adams, A. E., Tolman, R. M., Bybee, D., Sullivan, C. M., & Kennedy, A. C. (2012). The impact of intimate partner violence on low-income women's economic well-being: the mediating role of job stability. *Violence Against Women, 18*(12), 1345-1367.
- Ahmed, S. M. (2005). Intimate partner violence against women: experiences from a woman-focused development programme in Matlab, Bangladesh. *Journal of Health, Population and Nutrition, 95*-101.
- Ali, T. S., Asad, N., Mogren, I., & Krantz, G. (2011). Intimate partner violence in urban Pakistan: prevalence, frequency, and risk factors. *International Journal of Women's Health, 3*, 105-115.
- Auwal, M. A. (1996). Promoting microcapitalism in the service of the poor: The Grameen model and its cross-cultural adaptation. *Journal of Business Communication, 33*(1), 27-49.
- Banyard, V., Potter, S., & Turner, H. (2011). The impact of interpersonal violence in adulthood on women's job satisfaction and productivity: The mediating roles of mental and physical health. *Psychology of Violence, 1*(1), 16.
- Bhatt, N., & Tang, S. Y. (2001). Making microcredit work in the United States: Social, financial, and administrative dimensions. *Economic Development Quarterly, 15*(3), 229-241.

- Bronfenbrenner, U. (1997). Ecological models of human development. *Readings on the Development of Children, 1993*, 37-43.
- Breiding, M.J., Chen J., & Black, M.C. (2014). *Intimate Partner Violence in the United States — 2010*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Bybee, D., & Sullivan, C. M. (2005). Predicting re-victimization of battered women 3 years after exiting a shelter program. *American Journal of Community Psychology, 36*(1-2), 85-96.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions, 154*, 136-136.
- Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse, 3*(2), 231.
- Chen, M., Vanek, J., Lund, F., Heintz, J., Jhabvala, R., & Bonner, C. (2005). *Progress of the World's Women 2005: Women, Work & Poverty*. New York, NY: UN Development Fund for Women.
- Chuang, C. H., Cattoi, A. L., d, Camacho, F., Dyer, A., & Weisman, C. S. (2012). Longitudinal association of intimate partner violence and depressive symptoms. *Mental Health In Family Medicine, 9*(2), 107-114.
- Columbia University. (n.d.). Social indicators survey. Retrieved January 19, 2015 from <http://cupop.columbia.edu/research/research-areas/social-indicators-survey-sis>

- Dalal, K. (2011). Does economic empowerment protect women from intimate partner violence?. *Journal of injury and violence research*, 3(1), 35.
- D'Zurilla, T. J., Chang, E. C., Nottingham, E. J., & Faccini, L. (1998). Social problem-solving deficits and hopelessness, depression, and suicidal risk in college students and psychiatric inpatients. *Journal of Clinical Psychology*, 54(8), 1091-1107.
- D'Zurilla, T.J., Nezu, A.M., & Maydeu-Olivares, A. (2002). *Social Problem-Solving Inventory-Revised (SPSI-R)*. North Tonawanda, NY: Multi-Health Systems.
- Ellsberg, M., Arango, D. J., Morton, M., Gennari, F., Kiplesund, S., Contreras, M., & Watts, C. (2014). Prevention of violence against women and girls: what does the evidence say?. *The Lancet*.
- Ellsberg, M., Jansen, H. A., Heise, L., Watts, C. H., & Garcia-Moreno, C. (2008). Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *The Lancet*, 371(9619), 1165-1172.
- Evans, P. M. (2007). (Not) Taking account of precarious employment: Workfare policies and lone mothers in Ontario and the UK. *Social Policy & Administration*, 41(1), 29-49.
- Ford-Gilboe, M., Wuest, J., & Merritt-Gray, M. (2005). Strengthening capacity to limit intrusion: theorizing family health promotion in the aftermath of woman abuse. *Qualitative Health Research*, 15(4), 477-501.

- Ford-Gilboe, M., Wuest, J., Varcoe, C., Davies, L., Merritt-Gray, M., Campbell, J., & Wilk, P. (2009). Modelling the effects of intimate partner violence and access to resources on women's health in the early years after leaving an abusive partner. *Social Science & Medicine*, 68(6), 1021-1029.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Fox, G. L., & Benson, M. L. (2006). Household and neighborhood contexts of intimate partner violence. *Public health reports*, 121(4), 419.
- Fragile Families. (2006). *Scales Documentation and Question Sources for Three-year Questionnaires*. Retrieved September 15, 2012 from <http://www.fragilefamilies.princeton.edu/documentation.asp>
- García-Moreno, C., Zimmerman, C., Morris-Gehring, A., Heise, L., Amin, A., Abrahams, N., ... & Watts, C. (2014). Addressing violence against women: a call to action. *The Lancet*.
- Gilroy, H., Symes, L., & McFarlane, J. (2014). Economic solvency in the context of violence against women: a concept analysis. *Health & Social Care in the Community*.

- Goodman, L. A., Smyth, K. F., Borges, A. M., & Singer, R. (2009). When crises collide: How intimate partner violence and poverty intersect to shape women's mental health and coping?. *Trauma, Violence, & Abuse, 10*(4), 306-329.
- Heise, L. L. (1998). Violence against women an integrated, ecological framework. *Violence Against Women, 4*(3), 262-290.
- Hong, P. Y. P., Sheriff, V. A., & Naeger, S. R. (2009). A bottom-up definition of self-sufficiency voices from low-income jobseekers. *Qualitative Social Work, 8*(3), 357-376.
- Hu, L. & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.
- Hulme, D. (2008). The Story of the Grameen Bank: From subsidised microcredit to market-based microfinance. *Brooks World Poverty Institute Working Paper, (60)*.
- Jewkes, R., Levin, J., & Penn-Kekana, L. (2002). Risk factors for domestic violence: findings from a South African cross-sectional study. *Social science & medicine, 55*(9), 1603-1617.
- Johnson, D. M., Worell, J., & Chandler, R. K. (2005). Assessing psychological health and empowerment in women: The personal progress scale revised. *Women & health, 41*(1), 109-129.
- Kim, J. C., Watts, C. H., Hargreaves, J. R., Ndhlovu, L. X., Phetla, G., Morison, L. A., ... & Pronyk, P. (2007). Understanding the impact of a microfinance-based

intervention on women's empowerment and the reduction of intimate partner violence in South Africa. *American journal of public health*, 97(10), 1794-1802.

Kohler, J. K., Anderson, E. A., Oravec, L., & Braun, B. (2004). Relationship constellations and dynamics of low-income rural mothers. *Affilia*, 19(2), 160-173.

Larance, L. Y., & Porter, M. L. (2004). Observations from practice support group: Membership as a process of social capital formation among female survivors of domestic violence. *Journal of Interpersonal Violence*, 19(6), 676-690.

Liang, B., Goodman, L., Tummala-Narra, P., & Weintraub, S. (2005). A theoretical framework for understanding help-seeking processes among survivors of intimate partner violence. *American Journal of Community Psychology*, 36(1-2), 71-84.

McFarlane, J., Nava, A., Gilroy, H., Paulson, R., & Maddoux, J. (2012). Testing two global models to prevent violence against women and children: methods and baseline data analysis of a seven-year prospective study. *Issues in mental health nursing*, 33(12), 871-881.

Michau, L., Horn, J., Bank, A., Dutt, M., & Zimmerman, C. (2014). Prevention of violence against women and girls: lessons from practice. *The Lancet*.

Modi, M. N., Palmer, S., & Armstrong, A. (2014). The role of Violence Against Women Act in addressing intimate partner violence: a public health issue. *Journal of Women's Health*, 23(3), 253-259.

- Moyer, V. A. (2013). Screening for intimate partner violence and abuse of elderly and vulnerable adults: US Preventive Services Task Force recommendation statement. *Annals of internal medicine*, 158(6), 478-486.
- Norbeck, J. S. (1995). *Scoring Instructions for the Norbeck Social Support Questionnaire (NSSQ), revised 1995* (Unpublished material). Available from <http://nursing.ucsf.edu/jane-norbeck-questionnaires-research-instruments>
- Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research*, 30, 264-269.
- Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1983). Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. *Nursing Research*, 32, 4-9.
- Maydeu-Olivares, A., & D'Zurilla, T. J. (1996). A factor-analytic study of the Social Problem-Solving Inventory: An integration of theory and data. *Cognitive Therapy and Research*, 20(2), 115-133.
- Postmus, J. L., Plummer, S. B., McMahon, S., Murshid, N. S., & Kim, M. S. (2011). Understanding economic abuse in the lives of survivors. *Journal of Interpersonal Violence*, 0886260511421669.
- Rivara, F. P., Anderson, M. L., Fishman, P., Bonomi, A. E., Reid, R. J., Carrell, D., & Thompson, R. S. (2007). Healthcare utilization and costs for women with a history of intimate partner violence. *American journal of preventive medicine*, 32(2), 89-96.

- Rodriguez, M., Heilemann, M., Fielder, E., Ang, A., Nevarez, F., & Mangione, C. (2008). Intimate partner violence, depression, and PTSD among pregnant Latina women. *Annals Of Family Medicine*, 6(1), 44-52.
- Romero, D., Chavkin, W., Wise, P. H., & Smith, L. A. (2003). Low-Income Mothers' Experience with Poor Health, Hardship, Work, and Violence Implications for Policy. *Violence Against Women*, 9(10), 1231-1244.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy Scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in Health psychology: A User's Portfolio* (pp. 35-37). Windsor, UK: NFER-NELSON.
- Scott, E. K., London, A. S., & Gross, G. (2007). "I try not to depend on anyone but me": Welfare-Reliant women's perspectives on self-sufficiency, work, and marriage*. *Sociological Inquiry*, 77(4), 601-625.
- Sing, M., Hill, H., & Mendenko, L. (2001). *Work, Welfare, and Family Well-Being*. Des Moines: Iowa State Department of Human Services.
- Simmons L.A., Braun B., Wright D.W. & Miller S.R. (2007). Human capital, social support, and economic wellbeing among rural, low-income mothers: a latent growth curve analysis. *Journal of Family Economic Issues*, 28, 635–652.
- Staggs, S. L., Long, S. M., Mason, G. E., Krishnan, S., & Riger, S. (2007). Intimate partner violence, social support, and employment in the post-welfare reform era. *Journal of Interpersonal Violence*, 22(3), 345-367.

- Staggs, S. L., & Riger, S. (2005). Effects of Intimate Partner Violence on Low-Income Women's Health and Employment. *American Journal Of Community Psychology*, 36(1/2), 133-145.
- Stover, C. S., Meadows, A. L., & Kaufman, J. (2009). Interventions for intimate partner violence: Review and implications for evidence-based practice. *Professional Psychology: Research and Practice*, 40(3), 223.
- Vung, N. D., Ostergren, P. O., & Krantz, G. (2008). Intimate partner violence against women in rural Vietnam-different socio-demographic factors are associated with different forms of violence: Need for new intervention guidelines?. *BMC Public Health*, 8(1), 55.
- US Census Bureau. (2014). Survey of income and program participation: Organizing principles and interview procedures. Retrieved January 19, 2015 from <http://www.census.gov/programs-surveys/sipp/methodology/organizing-principles.html>
- US Department of Health and Human Services. (2014). 2014 Poverty Guidelines. Retrieved January 16, 2015 from <http://aspe.hhs.gov/poverty/14poverty.cfm>
- Vyas, S., & Watts, C. (2009). How does economic empowerment affect women's risk of intimate partner violence in low and middle income countries? A systematic review of published evidence. *Journal of international Development*, 21(5), 577-602.

- Walker, R., & Kellard, K. (2001). *Staying in Work: Policy Overview*. (Research Report No. 265). Norwich: Department of Education and Employment.
- Wolfe, D. A., Crooks, C., Jaffe, P., Chiodo, D., Hughes, R., Ellis, W., ... & Donner, A. (2009). A school-based program to prevent adolescent dating violence: A cluster randomized trial. *Archives of Pediatrics & Adolescent Medicine*, *163*(8), 692-699.
- Woodward, K. (2008). The multiple meanings of work for welfare-reliant women. *Qualitative Sociology*, *31*(2), 149-168.
- World Health Organization. (2002). *World Report on Violence and Health*. Geneva, Switzerland: Author.
- World Health Organization. (2012). *Understanding and addressing violence against women: Intimate partner violence*. Geneva Switzerland: Author.
- World Health Organization. (2013). *Policy and Clinical Practice Guidelines for Responding to Intimate Partner Violence and Sexual Violence*. Geneva, Switzerland: Author.
- Wuest, J., Ford-Gilboe, M., Merritt-Gray, M., & Berman, H. (2003). Intrusion: The central problem for family health promotion among children and single mothers after leaving an abusive partner. *Qualitative Health Research*, *13*(5), 597-622.
- Zhan, M., & Pandey, S. (2004). Postsecondary education and economic well-being of single mothers and single fathers. *Journal of Marriage and Family*, *66*(3), 661-673.

APPENDIX A

Instruments

Economic Hardship (Fragile Families, 2006)

FF1	Did you receive free food or meals?	0	1	66
FF2	Did you not pay the full amount of rent or mortgage payments?	0	1	66
FF3	Were you evicted from your home or apartment for not paying the rent or mortgage?	0	1	66
FF4	Did you not pay the full amount of a water, electricity or heating bill?	0	1	66
FF5	Did you borrow money from friends or family to help pay bills?	0	1	66
FF6	Did you move in with other people even for a little while because of financial problems?			
FF7	Did you stay at a shelter, in an abandoned building, an automobile or any other place not meant for regular housing even for one night?	0	1	66
FF8	Was there anyone in your household who needed to see a doctor or go to the hospital but couldn't go because of the cost?	0	1	66
FF9	Have you cut back on buying clothes for yourself?	0	1	66
FF10	Have you worked overtime or taken a second job?	0	1	66

Social Problem Solving Inventory (D’Zurilla, Nezu, & Maydeu-Olivares, 2002)

Below are some ways that you might think, feel, and act when faced with problems. A problem is something important in your life that bothers you. Please rate HOW TRUE each statement is for you.					
P S 1	I feel threatened and afraid when i have an important problem to solve				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 2	When making decisions, i do not evaluate all my options carefully enough				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 3	I feel nervous and unsure of myself when i have an important decision to make.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 4	When my first efforts to solve a problem fail, i know if i persist i will be able to eventually find a good solution.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 5	When i have a problem, i try to see it as a challenge, or opportunity to benefit in a positive way from having the problem.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 6	I wait to see if a problem will resolve itself first, before trying to solve it myself.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 7	When my first efforts to solve a problem fail, i get very frustrated.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 8	When i am faced with a difficult problem, i doubt that i will be able to solve it on my own no matter how hard i try.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 9	Whenever i have a problem i believe that it can be solved.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 10	I go out of my way to avoid having to deal with problems in my life..				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 11	Difficult problems make me very upset.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....
P S 12	When i have a decision to make, i try to predict the positive and negative consequences of each option.				
	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....	1.....	2.....	3.....	4.....

P S 1 3	When problems occur in my life, i like to deal with them as soon as possible	Not At All True	Slightly True	Moderately True	Very True	Extremely True
0.....1.....2.....3.....4.....					
P S 1 4	When i am trying to solve a problem, i go with the first good idea that comes to mind.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 1 5	When i am faced with a difficult problem, i believe that i will be able to solve it on my own if i try hard enough.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 1 6	When i have a problem to solve, one of the first things i do is get as many facts about the problem as possible.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 1 7	When i problem occurs in my life, i put off trying to solve it for as long as possible.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 1 8	I spend more time avoiding my problems than solving them.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 1 9	Before i try to solve a problem, i set a specific goal so that i know exactly what i want to accomplish	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 2 0	When i have a decision to make, i do not take the time to consider the pros and cons of each option	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 2 1	After carrying out a solution to a problem, i try to evaluate as carefully as possible how much the situation has changed for the better.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 2 2	I put off solving problems until it is too late to do anything about them.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 2 3	When i am trying to solve a problem, i think of as many options as possible until i cannot come up with any more ideas	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S 2 4	When making decisions, i go with my “gut feeling” without thinking too much about the consequences of each option.	Not At All True	Slightly True	Moderately True	Very True	Extremely True
	0.....1.....2.....3.....4.....					
P S	I am too impulsive when it comes to making decisions	Not At All True	Slightly True	Moderately True	Very True	Extremely True

2	0.....1.....2.....3.....4.....
5	

Workforce and School Participation (McFarlane et al., 2012)

	During the last 4 months (date _____)	NO	YES
WSP1	Have you been employed? → (Count any part of the last 4 months)	0	1
WSP2	Do/Did you receive health insurance from an employer? →	0	1
WSP3	Type of Work? _____	Labor Code	
WSP4	Number of hours worked each week? ____ (an estimate is fine)		
WSP5 h	Hourly wage \$_____ (an estimate is fine)		
WSP6	What type of work would you like to do? _____	Labor Code	
WSP7	Do/Did you go to school? → (Count any part of the last 4 months)	0	1
WSP8	Type of school (beauty, computer) _____	Labor Code	
WSP9	How many months until you complete the program ____		
WSP10	Would you like to go to school?	0	1
WSP10 a	If YES, type of program _____	Labor Code	

General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)

Item	Question	Not at all true	Hardly True	Moderately True	Exactly True
GSE1	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
GSE2	If someone opposes me, I can find the means and ways to get what I want.	1	2	3	4
GSE3	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
GSE4	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
GSE6	I can solve most problems if I invest the necessary effort.	1	2	3	4
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
GSE8	When I am confronted with a problem I can usually find several solutions.	1	2	3	4
GSE9	If I am in trouble, I can usually think of a solution.	1	2	3	4
GSE10	I can usually handle whatever comes my way	1	2	3	4

Social Support (Norbeck, Lindsey, & Carrieri, 1981)

First Name		Relationship					CODE
Second Name		Relationship					CODE
Third Name		Relationship					CODE
	Thinking about ____ (FIRST person), During the last 4 months (date _____)	Not at all	A little	Moderate	Quite a bit	A Lot	
SS1	How much does _____ make you feel liked or loved?	0	1	2	3	4	
SS2	How much does _____ make you feel respected?	0	1	2	3	4	
SS3	How much can you confide in _____ ?	0	1	2	3	4	
SS4	How much does _____ agree with you?	0	1	2	3	4	
SS5	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4	
SS6	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4	
SS7	Have you shared the abuse with _____ ?	0	1	2	3	4	
	Thinking about _____ (SECOND person), Since the 36-Month Interview (date _____)	Not at all	A little	Moderate Amount	Quite A bit	A Lot	
SS8	How much does _____ make you feel liked or loved?	0	1	2	3	4	
SS9h	How much does _____ make you feel respected?	0	1	2	3	4	
SS10	How much can you confide in _____ ?	0	1	2	3	4	
SS11	How much does _____ agree with you?	0	1	2	3	4	
SS12	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4	
SS13	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4	
SS14	Have you shared the abuse with _____ ?	0	1	2	3	4	
	Thinking about _____ (THIRD person), Since the 36-Month Interview (date _____)	Not at all	A little	Moderate	Quite A bit	A Lot	
SS15	How much does _____ make you feel liked or loved?	0	1	2	3	4	
SS16	How much does _____ make you feel respected?	0	1	2	3	4	
SS17	How much can you confide in _____ ?	0	1	2	3	4	
SS18	How much does _____ agree with you?	0	1	2	3	4	
SS19	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4	
SS20	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4	
SS21	Have you shared the abuse with _____ ?	0	1	2	3	4	

Personal Progress Scale–Revised (Johnson, Worell, & Chandler, 2005)

Respond with 1 if the statement is ALMOST NEVER TRUE of you now, 7 if true of you ALMOST ALL THE TIME, and 2 through 6 if the statement is usually not true, sometimes true, or frequently true.	
E1	I have equal relationships with important others in my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E2	It is important to me to be financially independent. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E3	It is difficult for me to be assertive with others when I need to be. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E4	I can speak up for my needs instead of always taking care of other people’s needs. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E5	I feel prepared to deal with the discrimination I experience in today’s society. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E6	It is difficult for me to recognize when I am angry. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E7	I feel comfortable in confronting my instructor/supervisor when we see things differently. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E8	I now understand how my cultural heritage has shaped who I am today. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E9	I give into others so as not to displease or anger them. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E10	I don’t feel good about myself as a woman. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E11	When others criticize me, I do not trust myself to decide if they are right or if I should ignore them. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E12	I realize that given my current situation, I am coping the best I can. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E13	I am feeling in control of my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E14	In defining for myself what it means for me to be attractive, I depend on the opinions of others. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7

E15	I can't seem to make good decisions about my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E16	I do not feel competent to handle the situations that arise in my everyday life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E17	I am determined to become a fully functioning person Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E18	I do not believe there is anything I can do to make things better for women like me in today's society. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E19	I believe that a woman like me can succeed in any job or career that I choose. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E20	When making decisions about my life, I do not trust my own experiences. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E21	It is difficult for me to tell others when I feel angry. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E22	I am able to satisfy my own sexual needs in a relationship. (I can say what i want and not want in my sexual relationship) Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E23	It is difficult for me to be good to myself. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E24	It is hard for me to ask for help or support from others when I need it. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E25	I want to help other women like me improve the quality of their lives. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E26	I feel uncomfortable in confronting important others in my life when we see things differently. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E27	I want to feel more appreciated for my cultural background. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E28	I am aware of my own strengths as a woman. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7

APPENDIX B

IRB Approval Letter



Office of Research
6700 Fannin Street
Houston, TX 77030-2343
713-794-2480 Fax 713-794-2488

June 12, 2014

Ms. Heidi Gilroy
College of Nursing
6700 Fannin Street
Houston, TX 77030

Dear Ms. Gilroy:

Re: Economic Solvency in Abused Women: Testing a Theoretical Model (Protocol #: 17729)

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Jan Foster, PhD, APRN, CNS
Institutional Review Board - Houston

cc. Dr. Branda Binder, College of Nursing - Houston
Judith McFarlane, PaD, College of Nursing - Houston
Graduate School

APPENDIX C
IRB Revision Letter



Institutional Review Board
Office of Research
6700 Fannin, Houston, TX 77030
713-794-2480
mjackson3@twu.edu
<http://www.twu.edu/irb.html>

DATE: February 17, 2015

TO: Ms. Heidi Gilroy
Nursing - Houston

FROM: Institutional Review Board - Houston

Re: *Notification of Approval for Modification for A Confirmatory Factor Analysis to validate Theoretical Model of Economic Solvency in women reporting intimate partner violence (Protocol #: 17729)*

The following modification(s) have been approved by the IRB:

Request to change title to: A Confirmatory Factor Analysis to validate a Theoretical Model of Economic Solvency in Women reporting Intimate Partner Violence.

cc. Dr. Judith McFarlane, Nursing - Houston