A Dissertation

entitled

Development and Validation of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)

By

Jared S. Rose

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Doctor of Philosophy Degree in Counselor Education and Supervision

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An Abstract of

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Individuals infected and affected by the human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) have distinctive mental and emotional health issues (Acuff et al., 1999; Badiee et al., 2012; Hult et al., 2007). This study sought to create an instrument that measures the attitude element of competency with the development of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS (MHP-PLHIV-AS). After the MHP-PLHIV-AS's creation by a Content Evaluation Panel of HIV/AIDS Experts, it was piloted for calibration with a sample of mental health professionals (n = 43), then administered to a larger sample for validation (n = 454). The newly designed MHP-PLHIV-AS was analyzed through a Rasch Measurement Model (RMM; Rasch, 1960, 1980). RMM diagnostics and analyses provides evidence to support a two-dimensional (societal and personal dimensions) measurement of the attitude towards PLHIV construct. The authors provide background, processes, and results of the study, and implications not only for the use of the MHP-PLHIV-AS, but also of attitude being a two-dimensional construct.

For Michael, without whom none of this would be possible. You sacrificed greatly so I could achieve my goal. Know that your support *was* my survival. You are my best friend, my love, my husband, my lobster. 143!

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List of Abbreviations

AACD	American Association for Counseling and Development
AAS	AIDS Attitude Scale
ACA	American Counseling Association
AIDS	Acquired Immune Deficiency Syndrome
AMCD	Association for Multicultural Counseling and Development
APA	American Psychological Association
CACREP	Council for Accreditation of Counseling and Related Educational Programs
CBT	Cognitive Behavioral Therapy
CDC	Centers for Disease Control and Prevention
CEP	Content Evaluation Panel
CLEAR	Choosing Life! Empowerment! Action! Results!
CTT	Classical Test Theory
DEBI	Diffusion of Effective Interventions
HIP	High Impact HIV/AIDS Prevention Project
HIV	Human Immunodeficiency Virus
IRB	Internal Review Board
IRT	Item Response Theory
IVDU	Intravenous drug use(r)
MHP	Mental Health Professional
MSJCC	Multicultural & Social Justice Counseling Competencies
MSM	Men-who-have-sex-with-men
OCSWMFT	Ohio Counselor, Social Worker, and Marriage and Family Therapist Board
PLHIV	People Living with HIV and/or AIDS
POL	Popular Opinion Leader
PrEP	Pre-exposure Prophylaxis
RMM	Rasch Measurement Model

UNAIDS .....Joint United Nations Programme on HIV/AIDS
U. S. .....United States
UT .....University of Toledo

Chapter One

Introduction

1.1 Statement of the Problem

Since the early 1980s, the world has struggled against the human immunodeficiency virus (HIV) pandemic (Centers for Disease Control and Prevention [CDC], 2006; World Health Organization, 2010). When HIV was first seen in health care patients, little was known of the virus or how it was transmitted. With medical knowledge advancements available today, much more is now known about how to prevent and treat HIV infection. In developed countries, preventing HIV infection is relatively easy by simply avoiding certain infected bodily fluids such blood and fluids associated with sexual contact, yet according to the Centers for Disease Control and Prevention (CDC), incidence rates continue to rise (CDC, 2012; 2015c, 2015a). The United States (U.S.), where someone is infected with HIV every 10 minutes, is no exception. The CDC (2015c) reports a prevalence of over 1.2 million Americans infected with HIV which, if untreated properly, can lead to acquired immune deficiency syndrome (AIDS). The CDC (2015c) further notes over 50,000 new infections every year, and "1 in 8 (12.8%) are unaware of their infection" (p. 1) as they are not getting tested for HIV.

There is no vaccination for HIV. Within the last seven years, a treatment called "pre-exposure prophylaxis" (PrEP), which provides HIV medication to individuals at high risk of infection (e.g. intimate partners of someone HIV-positive), has given the public a false sense of vaccination (CDC, 2015d). PrEP treatment does dramatically reduce the opportunity for HIV infection, but it is merely a preventative measure (CDC, 2015). PrEP is in no way a vaccination, and the CDC (2015d) and treatment providers insist that individuals acquiring the treatment remain vigilant in other preventative measures, such as condom use and not sharing syringe materials for drug use.

There is no cure for HIV. It is true that one individual, "The Berlin Patient," remains heralded as having been cured after two bone marrow transplants for leukemia (Alford, 2014; Gholipour, 2014). Although it has yet to be made widely understood by the public, the reality is that he was not cured at all. His levels of HIV were just extremely low and changed in some fashion following his leukemia procedures that the term "cure" was being used (Cohen, 2012; Lafeuillade, 2012). The nature of the change to his particular strand of HIV remains a mystery to physicians (Lafeuillade, 2012), but he is still has HIV. In fact, the physicians who treated the man later denied they ever intended to make the claim that he was cured (Cohen, 2012).

Immunity to HIV is a concept that has only surfaced in the medical community in the past decade, and is still under close scrutiny and research. To understand this potential immunity, one must first take note of how HIV infects cells through the attachment to a particular protein. This protein, for most humans, is on the outside of cells operating in the immune system (i.e., T cells). The concept of immunity has come from the work by geneticists who have learned that a particular genetic abnormality

leaves some people with no such protein in their body (Refsland et al., 2010; Refsland, Hultquist, & Harris, 2012). In other words, with no protein to latch onto, HIV is unable to survive in the bodies of such individuals (Refsland et al., 2010). Although the general public has considered this concept as a natural immunity, the scientists studying this phenomenon were more reserved by using the term "HIV-1 restrictive" (Refsland et al., 2010, p. 4274). In this fashion, they made clear that even if it is a true immunity or not (and more research is needed before this claim can be made), it may be different for those infected with the HIV-2 strain (which originates from parts of West Africa). Even if this emerging research demonstrates true immunity, few people will benefit given less than 1% of the global population is believed to have this genetic abnormality (Ring, 2012).

Because there is no vaccination, no cure, and immunity which may or may not be possible for a minute segment of the global population, public health officials continue to advise that currently anyone who comes in contact with infected fluids is at risk of HIV infection. Some demographics are at particularly high risk of contracting HIV. Youth ages 13 to 24 make up 26% of new U.S. HIV infections (CDC, 2015c). Black/African Americans, who make up 12% of the U.S. population, continue to be the population most disproportionately affected, by accounting for 44% of new HIV infections (CDC, 2016a). Finally, men-who-have-sex-with-men (MSM) make up 63% of all new infections (CDC, 2015a). These incidence rates culminate to a percentage higher than 100 because an individual may be part of more than one at-risk group. As a matter of fact, the CDC (2016b) calls special attention to those who are included in all three demographics (Black/African American, MSM under the age of 24) as currently being at the most risk of HIV infection.

Because incidence of new infections continues to rise, and the high prevalence rates of those already living with HIV, HIV/AIDS being seen as a public health concern. This is fostered by knowing prevention methods such as safer sexual practices and non-sharing of syringe materials for drug use are known to prevent HIV transmission, yet communities continue to be affected by new infections. Frieden, Das-Douglas, Kellerman, and Henning (2005) argued the focus should not just be on public health, but rather on addressing mental health and substance abuse to simultaneously "improve individual treatment outcomes and reduce disease transmission, but [that such an approach] is uncommon" (p. 2400). A recommendation of treating mental and behavioral health, and substance use/abuse issues would seem to mental health professionals (MHPs) to be a logical approach. After all, such professionals are aware that in treating the root problem(s), symptoms can be reduced or eliminated and quality of life improved. In the case of HIV infection, addressing personal issues of the individual infected helps not only them, but also reduction of possible transmission to others (CDC, 2009; Frieden, Das-Douglas, Kellerman, & Henning, 2005).

Involvement by MHPs as part of a continuum of care for individuals who are HIV-infected is imperative. More importantly, "virtually all mental health professionals will eventually be faced with a client infected with HIV, associated with someone who is infected, or in fear of having been infected" (Carney, Werth, & Emmanuelson, 1994, p. 646). An assumption may be made that any individual with mental health education, training, and licensure or certification is equipped to work with individuals living with HIV/AIDS. Yet this is not necessarily the case.

Not only are individuals infected and affected by HIV marginalized, they share history, language, symbols, values, beliefs, and much more. They should be regarded as a unique, diverse culture group. As such, they should be viewed by MHPs from a multicultural vantage point (Ratts, Singh, Nassar-McMillan, Butler, & McCullough, 2015). This demographic is distinct and, if effective treatment is to be given, should be treated as such, including being given mental health services by MHPs who have at least some level of competency with the population. This is not to say that if a MHP has low competency in working with a particular demographic they are, in general, an incompetent mental health provider. Rather, that demographic-specific competency should be increased. It would be considered inappropriate, for example, for a Caucasian counselor to provide counseling to a first-generation Asian individual without some level of competency in working with the Asian population. The MHP of such a client would be expected to increase their Asian-related competency (Ratts, et al., 2015). It is reasonable to expect the same for any diverse culture, including those infected and affected by HIV/AIDS.

Mental health professions define competency in working with a particular demographic as being based upon knowledge, skill, attitude, and action (Arredondo et al., 1996; Ratts, et al., 2015; Sue et al., 1982). This four-pronged structure of competence has been the basis for a number of competency scale constructions to determine level of MHPs competency for diverse populations. The "Sexual Orientation Counselor Competency Scale (SOCCS)," for example, is a psychometric tool used to determine the competency level of professional counselors in working with lesbian, gay, and bisexual (LGB) individuals (Bidell, 2005). It does so by evaluating the knowledge, attitude, and

skill relating to LGB individuals. Similarly, investigation on competency to work with individuals who are transgender has also begun (O'Hara, Dispenza, Brack, & Blood, 2013). A set of competencies for counseling those with addictions is another example. The U. S. Department of Health and Human Services (HHS), in partnership with the Substance Abuse and Mental Health Services Administration (SAMHSA), authored the *Addictions Counseling Competencies: The Knowledge, Skill, and Attitudes of Professional Practice* (HHS, 2007). As the title suggests, the entire manual is on what it takes in knowledge, attitude, and skill to be considered competent in working with individuals with addictions. These are but a few examples of how unique diversity and counseling needs are addressed for distinct populations. The problem is that there are no measures to evaluate competency in working with individuals infected, affected, and at-risk of HIV/AIDS.

A step toward the HIV/AIDS competency was taken by Rose, Osborne, Hairston, Laux, and Pawelczak (2015). In their study, in order to gauge the level of HIV/AIDS knowledge among professional counselors, they created the "Professional Counselor HIV/AIDS Knowledge Questionnaire (PC-HA-KQ)." They surveyed professional counselors and counseling students throughout Ohio (n = 70). They found that, on average, professional counselors and counseling students' knowledge about HIV/AIDS was more accurate than that of the general public. Further results of their study demonstrated that, for their sample, the older the person was, the less they knew about HIV/AIDS.

Although the PC-HA-KQ (Rose et al., 2015) was recently created to determine MHPs' HIV/AIDS knowledge level, there is currently no method to determine MHPs'

attitudes towards people living with HIV/AIDS (PLHIV). This project set out to create an instrument which would measure MHPs' attitudes towards PLHIV, which is a needed tool in guiding and improving professional training, as well as in establishing HIV-population-specific competency. As an analysis of current instrumentation will later demonstrate, no proper tool currently exists. The deficit of a viable attitude scale will be elaborated upon, as will will the issues surrounding diversity in working with this population (including identified, specific mental, behavioral, and substance use/abuse needs), and the need for competency measurements be more fully explored. What remained was a clear understanding of why the instrument created in this study was needed, and how its development and validation was done in a sound, measurement-construction manner.

1.2 Background of the Problem

It was the early 1980s when AIDS was first documented in the U.S. (CDC, 1982; U.S. Government, 2013a). At the time, only gay men were diagnosed with the disease, leading to the stigmatized view of the disease as being "The Gay Disease." As the condition began to be seen by physicians in women and babies, the medical community took notice and realized that they were not looking at something which affected only gay men, but in reality affected any person who exchanged bodily fluids during sexual contact and blood transfusions were at risk (U.S. Government, 2013a). At the time, the mid-1980s, what confused the medical community was what exactly in the bodily fluids caused infection. Desperate for answers, the CDC continued to communicate what was being seen in hospitals across the nation, and asked for assistance in identifying the cause of AIDS. It was then that three, independently-run research teams realized a virus they

had been studying which affected the human immune system was causing medical conditions seen by AIDS patients (Gallo & Montagnier, 2003). The three research teams also learned of each other's respective work and an agreement was reached to call the virus HIV for human immunodeficiency virus. HIV, the medical community learned, was what was transmitted from person-to-person and lead to AIDS.

As research began to increase into the biological issues surrounding HIV/AIDS began, so too did research by MHPs looking at concerns relative to mental health of individuals living with HIV. In the 1980s focus of MHP research was largely focused on issues relative to the therapeutic relationship and mandated reporting of clients' behaviors which may pose concern for infection to other people (Gary & Harding, 1988).

Another area of focus during this time period was centered on particular cultural groups. Coleman and Ramafedi (1989) investigated the connection between stigma of HIV/AIDS, stigma of being lesbian, gay, or bisexual (LGB), and adolescent behaviors which increased risky behaviors for HIV infection. They determined that, since so many people still considered HIV/AIDS as "The Gay Disease" as it had been termed early in the pandemic, LGB adolescents were struggling against both the stigma of the disease and of their sexual orientation. This struggle had a direct positive correlation to increased risky behavior which in turn lead to more HIV infections among such youth. Coleman and Ramafedi became among the first to call for the de-stigmatizing of HIV/AIDS as doing so only contributed to more infections.

Another cultural group of concern during this time was that of Hispanics (Carballo-Diéguez, 1989). Through work as an advocate for the de-stigmatization of the disease, Carballo- Diéguez noted that MHPs (and physical health professionals) needed

to approach individuals from a multicultural standpoint in order to better understand the unique aspects of individuals' cultures in order to try to provide adequate services to those infected, affected, and at-risk of HIV/AIDS.

The early 1990s saw more professional literature with cautions to MHPs to be mindful of their ethical and legal obligations as they relate to working with individuals with a communicable disease (Harding, Gray, & Neal, 1993). It also became clearer during this time period that mood disorders such as depression and anxiety were hallmark challenges for individuals infected with HIV (Hedge, 1990). Even more concerning, suicide rates among HIV-positive individuals began to increase dramatically (Catalan & Pugh, 1995). At the time, AIDS was seen as a death sentence because pharmacological treatments were inadequate, and carried with them devastating side-effects. Thus, suicide was often considered as a viable option for individuals with HIV over the very real possibility of a long, slow, and painful death. Such increase in suicides of course was seen as a concern by MHPs (Catalan & Pugh, 1995).

As the 1990's closed, SAMSHA released a guide to working with clients who had HIV/AIDS by the (Acuff et al., 1999). After an extensive four-year study, and over $4 million dollars, the primary mental and behavioral concerns of individuals living with HIV/AIDS were identified as: mood disorders (anxiety and depression leading to suicide), substance abuse disorders, adjustment disorders (especially immediately following diagnosis) disease self-efficacy, self-esteem, stigma, medication adherence, disease disclosure and support issues, spiritual/wellness/hope issues, and transmission risk reduction.

While MHPs continued to address individual needs of those infected and affected by HIV/AIDS, the CDC shifted its focus during the early 2000s toward community-level risk-reduction of HIV infection. By this time, it was clear that HIV infection was avoidable by not coming into contact with infected fluids (such as those through sexual contact and using needles for drug use). Consequently, transmission reduction became the focus through specific individual-, group-, and community-level prevention programs (CDC, 2009; Kalichman et al., 2001; Kelly, et al., 1991; Kelly, 2004; Kegeles Hays, & Coates, 1996). This marked a resurgence in harm-reduction models. Syringe exchange programs, for example, were not a new concept in public health. Syringe exchange programs could be traced back to the late 1970's (San Francisco AIDS Foundation [SFAF], 2016). Such programs became a legal debate in the mid-1980s (Fisher, 2012) as they were viewed by politicians and many in the general public as encouraging drug use. However, between the 1970s and late 1990s, such programs largely focused on reduction of intravenous drug use and transmission of other blood borne pathogens such as Hepatitis A (SFAF, 2016). It is not that syringe exchange programs did not exist, or that they were not beneficial in reducing HIV transmission, only that in the early 2000s such programs become highly valued for their HIV harm reduction benefits. Because of this, program design, implementation, and funding became readily available for HIV education and prevention organizations. Moving forward to the 2010s, MHPs continue to produce research in areas such as medication adherence, stigma/shame, disclosure issues, and the recognition that mental and behavioral issues surrounding HIV/AIDS do not necessarily abate for an individual living with the disease (Badiee et al., 2012).

In addition to the unique physical problems associated with this chronic illness, there is great psychological impact of living with HIV as well (Knox, Davis, & Friedrich, 1994). The culmination of research for more than three decades paints the clear picture of the following hallmark mental and behavioral issues for individuals living with HIV/AIDS:

- Mood disorders,
- Substance-use disorders,
- Adjustment disorders,
- Disease self-efficacy,
- Self-esteem,
- Adherence to medication,
- Disclosing infection to others,
- Negative social stigma,
- Overall wellbeing, and
- Prevention of transmission

These foundational issues are what is known from the professional research to date. In short, people living with HIV disease have problems and challenges which are not experienced the same way by any other group of people (Acuff et al., 1999; Badiee et al., 2012; Rose et al., 2015). What is not known, however, is the level to which MHPs are HIV-population-specifically competent to provide needed mental health services. The issue of competency is important for MHPs working with any diverse client. As discussed previously, and will be further elaborated on in the following chapter, those

infected and affected by HIV/AIDS are a diverse demographic and therefore deserve to have their mental health provider competent accordingly.

Sue et al. (1982) originally defined competence in working with any diverse group of people as being built upon the MHP's level of three things: knowledge, attitude, and skill. Professional counseling has a history steeped in stressing the need for multiculturalism in mental health, currently guided by the American Counseling Association's (ACA) *Code of Ethics* (ACA, 2014) and the *Multicultural and Social Justice Counseling Competencies* (*MSJCC*; Ratts et al., 2015). The *MSJCC* (Ratts, et al., 2015) build upon the original knowledge, attitude, and skill levels by adding the action level. This addition calls specific attention to how action is required on the part of professional counselors to be competent not only from a multicultural standpoint, but also in social justice. The American Psychological Association (APA) has also increased the multicultural focus for their profession (APA, 2008). Both professions continue to use knowledge, attitude, skill, and action as the basis for multicultural competency in working with clients.

As noted, the knowledge element for working with individuals infected and affected with HIV/AIDS was recently undertaken by Rose et al. (2015), with the creation of the "Professional Counselor HIV/AIDS Knowledge Questionnaire (PC-HA-KQ)." Although more research regarding knowledge level for MHPs (not just professional counselors) is required, the groundwork has been laid by their study to further this element of cultural competency.

It is crucial to better understand the next competency element of attitude. Attitudes are not just one of the cornerstones of competency, they are, as claimed by

social psychologists, possibly the most significant part of human interaction (Gawronski, 2007). It would stand to reason then, that attitudes within the therapeutic relationship are of utmost importance to understanding the competence level of a MHP working with a client infected or affected by HIV/AIDS. What is more, attitudes are intertwined with knowledge and experience (Carney, Werth, & Emmanuelson, 1994; Gawronski, 2007; Hunt, 1996; Rose et al., 2015). As Petty, Briñol, and DeMarree (2007) have contended from their social psychological investigations, attitudes operate on a higher-order cognitive level and can change over time based on new information (positive or negative) taken in through learning or experiences.

While no work has been conducted regarding the attitudes towards PLHIV by MHPs, efforts have been made in the past to measure general attitudes towards AIDS. Specifically, the first was the AIDS Attitudes Scales (AASs) constructed by Shrum, Turner, and Bruce in 1989. The AASs was a 54-item questionnaire which proved to be inappropriate for attitude investigation. As it could take individuals an hour or longer to complete it, the length alone made it cumbersome. Additionally, there were unable to establish that their instrument was a measure of the unitary construct of attitude towards AIDS. Instead, their statistical analysis found 12 factors, only 3 of which measuring AIDS attitudes. It is noteworthy that this instrument was not used for any follow-up research, likely because it simply could not be validated or considered reliable. Consequently, another AAS was created.

The next version of an AAS was made in 1992 by Froman, Owen, and Daisy. Their instrument was designed for nurses who were providing direct physical care to patients with AIDS. These authors identified two factors (empathy and avoidance) which

they claimed were related to AIDS attitudes. Careful consideration of the instrument's items, however, suggest a different conclusion. Seven questions dealt with attitudes about other issues than AIDS; specifically, some only asked about homosexuality and others only asked about intravenous drug use. This demonstrates that the newer instrument measured more than attitudes surrounding AIDS. Later, Froman and Owen (2001) created a "general population" version of the instrument which re-worded items to be appropriate to anyone, not just nurses. They made the claim it was appropriate for all populations, even when it was administered to largely the same sample (nurses), required a test/re-test administration in order to provide any statistically significant results regarding the construct of AIDS attitudes, and still contained questions relating to attitudes of non-AIDS-related topic items.

None of these past instruments are appropriate for use with today's MHPs. First, they lack an appropriate level of unidimensionality (measuring only one construct). Each of them measure attitudes relating to more than just AIDS (e.g. drug use or sexual orientation). Moreover, they do not measure attitudes of HIV and AIDS, only AIDS which is merely the final stage of HIV disease. Finally, they are not appropriate for MHPs as they do not investigate situations such professionals experience and have attitudes about which do not pertain to the general public (e.g. mandated reporting). Attitudes are an important piece of the MHPs competency equation in working with the diverse HIV/AIDS population. If better understanding of those attitudes and consequent competency is to occur, a new instrument must be created, which is what this study sought to accomplish.

1.3 Purpose of this Study

The purpose of this study was to create a new instrument which measures MHPs' attitudes towards PLHIV. As described, HIV infection rates continue to increase and individuals living with the disease have inimitable needs. Flowing from these facts, the rationale for this study was built upon the following premises:

- individuals living with the disease are a diverse population;
- MHPs need appropriate HIV/AIDS competency to work with this diverse population;
- attitude plays a significant role in such competency;
- measuring MHPs attitudes towards PLHIV is a segment of determining such competency;
- and no appropriate instrument currently exists and therefore should be created.

1.4 Research Questions

This proposed study's research questions are formulated and phrased based on the measurement analysis which will be utilized for this study; namely, the Rasch Measurement Model (RMM; Rasch, 1960, 1980) which is explained more fully in Chapter 3. This study seeks to construct a measure of attitudes toward HIV/AIDS by answering the following research questions:

1. To what extent do the participants use the MHP-HAAS rating scale categories as intended?
2. How well do the items separate participants into statistically distinct and meaningful levels?
3. To what extent do the items form a reliable (stable) line of inquiry (ruler)?

4. To what extent is the MHP-HAAS measuring a unidimensional construct (attitudes towards PLHIV)?
5. Is the item ordering of the MHP-PLHIV-AS meaningful?

1.5 Significance of the Study

There are three primary reasons why this study was significant and was undertaken. First, understanding the attitude towards PLHIV of MHPs is essential in training for, and understanding of, competency to work with those infected and affected by HIV/AIDS. Individuals of this demographic need MHPs to address their specific mental health needs, yet there is no understanding or determination of MHPs PLHIV-related competency to do so. This leads to the second significant reason for the study, namely that no current instrument exists, or could be properly adapted, that measures MHPs' attitudes towards PLHIV.

Finally, the instrument creation was a means to measure the attitude under investigation. In other words, it sought to go beyond understanding how participants respond to an instrument, how they may vary between other groups, etc. Rather, the focus of the study was on measurement development. When considering the importance of having competent MHPs providing services to the population at hand, it is essential that the manner in which such competence is gauged be accurate. Creating such a needed instrument was of significance to mental health professions as it is the first of its kind ever created, assists in leading to training of HIV/AIDS-competent MHPs, and be used to investigate practicing MHPs.

1.6 Definition of terms

Consideration should be given to a few key terms that will be used throughout this study. First, it is worth reiterating the fact that human immunodeficiency virus is acronymic to HIV, as acquired immune deficiency syndrome is to AIDS. HIV causes immune-system related problems in the individual who is infected. AIDS refers to the final stage of the disease progression caused by HIV. The stages will be later defined more clearly, but it is important to note on the front end some differences between HIV and AIDS, as well as how the use of these terms/words are used in different ways to convey different meanings throughout this proposal.

HIV is what is transmitted from person-to-person; whereas AIDS is a physician-given diagnosis when an individual presents with a set of identified physical set of symptoms and documented laboratory blood work. In other words, a person does not catch AIDS, although one can be infected by HIV. Additionally, an individual may be positive for HIV, but not meet criteria for an AIDS diagnosis. This impacts the manner in which individuals are referred to who have HIV and/or AIDS. Such reference language has changed over the course of the pandemic. Properly referring to someone is, for this demographic, an excellent example of how they should be viewed with the multicultural lens. Inaccurate terminology can be inappropriate and often offensive to the individual. Currently, per the Joint United Nations Programme on HIV/AIDS (UNAIDS; 2011) the internationally recognized appropriate term is "people living with HIV and/or AIDS," or simply "PLHIV."

Another core, reoccurring term will be mental health professionals (MHPs). This term is being used to refer to any licensed, or in-training, individual who provides the prevention, diagnosis, and treatment of mental, behavioral, and substance-related

disorders. Such MHPs would include professional counselors, and those psychologists and social workers who provide psychotherapeutic services or supportive services. Although it is the case that psychiatrists are also MHPs, for the purposes of this study they were not included in the research population of interest. In the future, it will likely be beneficial to explore their attitudes towards HIV/AIDS as well. At this time, however, they are not included because of their medical background (which may affect attitude development) and professional identity (on average this profession views themselves as different than other MHPs because of their medical-physician training).

There are a few other terms which will be elaborated on in subsequent chapters but are worthy of initial mention here. First, unidimensionality is a measurement term to describe the continuum and level of measuring one construct; in the case of this study, the statistical level of measuring the construct of attitudes towards PLHIV. Secondly, the proposed study sought to establish a new instrument which is being called the "Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale," or shorthanded to the "MHP-PLHIV-AS."

Further, when considering at-risk behavior and HIV transmission, there are two public-health terms which should be given clarification. The first is intravenous drug use, or intravenous drug user, both of which are commonly referred to as IVDU. This refers to a gambit of behaviors and materials (e.g., syringes) used for injecting non-prescription-related substances. The second public-health term is men-who-have-sex-with-men, or MSM. This term was originally created by the CDC to describe gay or bisexual men which in fact are at high risk for a variety of infectious diseases because the nature of the behavior. MHPs should give careful consideration to the use of the MSM

term. MSM refers to a set of sexual behaviors which is not the same thing as the culturally identifying of gay men or bisexual men. In other words, identifying as gay refers to an identification with gay culture, whereas being MSM refers to the sexual behaviors alone. Being a MSM should not imply a labeling of identity, nor should it discount the straight identifying males who also have same-sex behavior.

Finally, although in subsequent chapters they will be discussed at length, the core foundations for the study and instrument create should be made clear. Specifically, the construct of interest was the variable which was termed, "attitude towards people living with HIV/AIDS (PLHIV)." The original construct theory was that attitude towards PLHIV was a single dimension which could be measured. Part of this theory included the construct would range from less favorable to more favorable in the following levels (displayed here in descending order):

- Affirming
- Accepting
- Empathetic
- Compassionate
- Impartial
- Indifference
- Dismissive
- Alienating
- Punishing
- Violent

The assumption was that MHPs would have a more favorable attitude towards PLHIV. The rating scale categories established for use in answering the MHP-PLHIV-AS items were established as:

- 4 = Strongly Agree
- 3 = Agree
- 2 = Disagree
- 1 = Strongly Disagreement

As will be further explained in Chapters 4 and 5, it should be noted that the data from this study provided evidence which supports that the attitude towards PLHIV variable has two dimensions, not one dimension as the original construct theory. This resulted in a resetting of the construct theory to a two dimensional view of the construct. These dimensions of the construct were termed "societal" and "personal". The societal dimension has items which relate to things further from the individual such as social justice, government funding for research, etc. The personal dimension, conversely, are items relating to things closer to the individual such as having a HIV-positive client, infection avoidance, etc. All other terms used in this study are commonly used and should be easily identified and understood, and/or are listed in the acronym list for quick reference and further clarity.

1.7 Organization of Chapters

This chapter provides an introductory look into the study. As can be seen, it reviews the statement of the problem at hand and provides a very brief literature review that traces the historical development of the problem, highlighting the research done to date. It establishes for the reader the logical premises signifying the purpose of the

project. These cornerstones paint the picture of how there is a need for culturally-competent MHPs to work with the diverse group of individuals infected or affected by HIV/AIDS, and how there is no appropriate instrument in existence which looks at the attitude piece of such competency. This leads to the significance of this study, the conclusion that such an instrument should be created, which was the overall goal of this project. This chapter will now give a snap-shot of what will come in the additional chapters, and conclude with a brief summary of the overall proposed study.

Chapter Two begins with a brief medical history of HIV and AIDS, beginning with the first presentation of patients in 1981 and the discovery of HIV as the virus which can cause AIDS. A more detailed history of the mental health work surrounding PLHIV is then reviewed, with the primary foci delineated by decades leading to the current understanding of the scope of the non-medical, distinctive needs of PLHIV. Also included in the summary of over 30 years of mental health work includes the consideration of the needs of those affected by the disease (such as having a family or friend infected with HIV) and those at risk of infection. Chapter Two then turns attention to why it is crucial MHPs are prepared to work with those infected, affected, and at risk of HIV/AIDS because at some point they will almost assuredly work with clients that fall into one or more of these categories. To demonstrate this imperative, clarity is given to what the construct of attitude is and how it can be measured. A discussion then ensues regarding MHPs working with diverse populations (such as PLWH and their support systems which are affected by HIV), how professional competency is determined, and the role of attitude as a key principal to such competency. The chapter then provides a critical analysis of previously used ASSs. Such analysis leads to understanding the

instruments do not measure attitude of HIV *and* AIDS, lack an appropriate level of unidimensionality (i.e. they measure more than just one attitude construct), and discount elements of attitude unique to the services MHPs provide. The conclusion logically reached, and is spelled out at the end of the chapter, is that a new measurement tool of MHPs attitudes towards PLHIV was not only warranted but essential if MHPs are to be ready to handle the needs of this population.

Chapter Three addresses the research methods. The research questions are again noted, followed immediately by the theoretical development. Next, the framework for the study is described and includes detail regarding the validity approach that was taken. The project followed three phases of development and analysis, and the chapter details these phases as:

1. Phase I was the initial construction of the "Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)." A well respected, statistically grounded procedure is outlined whereby a group of content experts formulated the MHP-PLHIV-AS's continuum of attitude, items, and item response categories. Described also are the experts' qualifications, the method by which they proceeded for the instrument's construction, and the manner in which final decisions for the MHP-PLHIV-AS were be made.
2. Phase II was the piloting of the MHP-PLHIV-AS. This phase was required as a means to calibrate the MHP-PLHIV-AS accordingly before considering it to be in its final form. This step of the study is detailed in the chapter including the original targeted number of research participants

appropriate for this calibration (40-50), the final descriptive information of the pilot sample (n = 43), from where the sample was recruited (i.e. graduate-level MHPs in training), and the measurement diagnostics and analyses that were conducted post-administration to determine any changes required to the MHP-PLHIV-AS before it's validation phase.

3. Phase III, the validation study, was the final form of the MHP-PLHIV-AS being administered to a sample of MHPs across a variety of professional disciplines (n = 454) to determine the support of reliability and validity, descriptive statistics of the sample, the level of dimensionality for the attitude construct under investigation, and fit for items, rating scale categories, and participants.

Chapter Three also outlines the participants, procedures, and implementation components in keeping with such academic research pursuits, and acknowledges the need for Internal Review Board (IRB) approval of the study. A detailed review of the measurement analysis is then depicted. The analysis section of the chapter makes clearer how statistical analyses grounded in classical test theory (CTT) are not appropriate to be used for measuring psychological constructs such as this study's interest in attitudes. Diagnostics and analyses appropriate from an item response theory (IRT) standpoint were instead warranted, leading to the selection of the RMM. The differences between CTT and IRT are reviewed in detail in Chapter Three. So too is the RMM reviewed more specifically, including its use to investigate dimensionality, item fit, residual factors, category functioning, validity, reliability and separation, and item-person targeting.

Chapter Four reviews the results of the study. It provides a step-by-step of the diagnostics and analyses that were conducted, the results at each step, and implications of those results. The analyses led to two competing hypotheses of the best manner in which to utilize the MHP-PLHIV-AS. The chapter then delineates the supporting evidence for the hypothesis found to be the most appropriate in support of how to utilize the MHP-PLHIV-AS. The chapter ends by answering the research questions posed for the study. Chapter Five then draws out primary discussion points, including recommendations for enhancing the MHP-PLHIV-AS and additional future research. It concludes with noted limitations of the study.

1.8 Summary

HIV/AIDS is classified as a global pandemic for the individual, community, and societal damage it causes. Infection rates continue to rise and individuals who are infected have a collection of non-medical needs that are distinctive to them, and them alone. Further, those affected by, and at risk of, HIV also have mental, behavioral, and substance-related issues which can be addressed and improved through services provided by various MHPs. MHPs must be educated, trained, prepared, and competent in HIV/AIDS and PLHIV because they will undoubtedly work with this diverse population. Considerations around MHP competencies include, at the core, attitudes about the population being provided services. In order to understand a level of competency with this demographic, attitudes must be measured. The issue at hand is that there are no current, appropriate measures of attitudes about PLHIV, especially those which address circumstances exclusive to MHPs. If clients infected, affected, and at risk of HIV are to be best served, providing benefits to not only individuals but communities and society as

a whole, MHPs must be competent accordingly, and understanding their attitudes as part of that competency is a must. This study created that needed tool to measure MHPs attitudes towards PLHIV. It did so with effective diagnostic and analyses of measurement construction and attitude assessment.

Chapter Two

Literature Review

2.1 Brief History of HIV/AIDS

In the summer of 1981, five men presented at hospitals in Los Angeles, California with a variety of unusual health problems, including a specific kind of lung infection (pneumocystis pneumonia) which baffled physicians as such an infection was exceptionally rare (United States [U.S.] Government, 2013a). Physicians, suspecting their patients had compromised immune systems, contacted the Centers for Disease Control and Prevention (CDC) looking for answers and collaboration with any other medical professionals who may be seeing patients in similar distress. They received their answer quickly. Just after the CDC published a national report (CDC, 1981), the press started running stories about the Los Angeles patients and, within a week, reports from all over the country began to come in of other male patients with similar symptoms (U.S. Government, 2013a). The following year, with physicians agreeing that it was in fact a collapse of the immune system, the condition was termed by the CDC as acquired immune deficiency syndrome, or AIDS for short (CDC, 1982).

During the first two years of the identification of the disease, several important events occurred that would affect the course and shape of the medical and mental health

response to the disease. For one, because all of the men originally presenting in 1981 with AIDS identified themselves as gay males, the stigmatized term "Gay-Related Immune Deficiency (GRID)", or worse yet, "The Gay Disease" began to be the manner in which AIDS was referred. The general public and physicians alike conceptualized the disease as one that only affected gay males. Because of this, to this day it remains unknown how many non-gay male patients were being seen in hospitals around the country with AIDS, but were diagnosed and treated for other medical conditions, leading to a quicker death or complications associated with AIDS. It is also unknown how many men avoided medical treatment out of concern of the stigma associated with AIDS as a gay male disease. Physicians did not begin looking for the cause of the disease until they began seeing AIDS in babies and infants from blood transfusions, and women from sexual contact with men who had AIDS (U.S. Government, 2013a). It was then, in 1983, the medical community finally realized that for a few years they had been looking at one population as the sole bearer of a disease, when in actuality it was being transmitted to any human who came into contact with certain bodily fluids during sex, as well as through blood transfusions.

This shift in focus led to a historical discovery. Medical research groups in France, led by Montagnier, and two independently run groups in the United States (U.S.) run by Gallo and Levy, had been studying a virus since the late 1970s that attacked the human immune system (Gallo & Montagnier, 2003). As information began to surface that AIDS was seemingly transmitted through contact with bodily fluids (e.g. blood and sexual fluids), the three researchers all separately began to investigate if the virus they had been working on could be involved. They went on to discover not only was there a

connection between their work and the cause of AIDS, but of the other researchers' involvement with the same virus. In a joint decision between the French and U.S. governments, agreement was reached to provide each researcher the credit for the discovery, and to rename the virus from the three variations the researchers were calling it to HIV, the human immunodeficiency virus (Gallo & Montagnier, 2003).

The discovery of HIV led to the ability to isolate antibodies developed in the body that only occur in the presence of HIV (CDC, 1985). As a result, blood testing for HIV antibodies was created, allowing for HIV testing to begin, which became widely available through medical facilities and health departments in 1985. The discovery of HIV also accounted for better understanding that HIV (the virus) lead to AIDS (a collection of certain symptoms) when a certain amount of damage had occurred in the patient's body (CDC, 1985). Thus a new age of research was heralded in, both to address the medical needs to battle the disease, as well as the mental health needs of the individuals infected. In fact, the CDC's 1985 report calling for health-care providers and health departments to provide HIV antibody testing was the first official documentation recommending counseling services for those infected and at-risk of HIV transmission. Their report, however, solely focused on women who were pregnant or may become pregnant and neglected to address any needs of men.

2.2 Mental Health Professionals' (MHPs') Work Surrounding HIV/AIDS

2.2.1 1980s

Gray and Harding (1988) appear to have produced the first piece of counseling literature on working with individuals affected by HIV/AIDS. So early into the pandemic was their work that their article refers to the "AIDS virus" (p. 219) instead of HIV. Of

primary concern for the authors was the issue of confidentiality and mandated reporting by professional counselors who had clients that were infected and posed possible life-threatening consequences to sexual and/or intravenous drug using (IVDU) partners. In an attempt to salvage both the therapeutic relationship with the client and fulfil legal and ethical obligations, their recommendation at the time was threefold: (a) education with the client on transmission and ways to reduce potential harm to others; (b) consultation with the client's primary care or infectious disease doctor; and (c) active supportive work with the client on addressing issues such as disclosure to partners. They also recommended that if steps to assist the client failed and they put others at risk of infection, then mandated reporting was applicable and should be done to the local or state health department. These were sound, reasonable recommendations, all of which would still apply today, although many licensed professionals remain unaware that the appropriate reporting mechanism is to the local or state health department. Of particular interest when considering the historical context of this article is the ethical elements of consideration were those of the American Association for Counseling and Development (AACD), the precursor organization to what would become the American Counseling Association (ACA), but was not yet in existence at that time.

The rest of the counseling research from this decade was focused on certain client demographic groups which were particularly impacted by HIV-infection, as well as the stigma associated with infection. Such work is largely summarized by considering two particular articles. Coleman and Ramafedi (1989) stressed three core issues associated with HIV mental infection, mental health, and prevention. Specifically, they addressed lesbian, gay, and bisexual (LGB) individuals, adolescents, and stigma (both that of sexual

orientation and of HIV). They accurately drew the connection between stigma of being gay or bisexual being associated with psychosocial problems for adolescents, which in turn can lead to risky behaviors such as substance use and/or unsafe sexual practices. Such behaviors can lead to HIV infection, which was the concern and focus for these authors. They advocated for MHPs to provide de-stigmatizing, developmentally appropriate, and supportive treatment. They indicated that such work should not only focus on the clients themselves, but be done in conjunction with families and communities. Having demonstrated that stigma was directly related to risky behaviors, they even included a call for national social justice and advocacy efforts to attempt to combat the stigma associated with HIV/AIDS.

The second article which emphasizes the focus found in the counseling literature on HIV/AIDS during this early time of the disease is one which addressed the Hispanic culture. Carballo-Diéguez (1989) studied the disproportionate HIV-infection rates among the Hispanic community. This appears to be the first article in the professional literature which specifically discussed the need to address multicultural aspects when helping clients dealing with HIV/AIDS. Carballo-Diéguez advocated for addressing elements such as socioeconomic status, immigration issues, social and value structures, and religious belief systems when working with the stigma and shame associated with either hiding one's sexual identity and/or one's HIV-infection. Carballo-Diéguez stressed that true therapeutic work with clients cannot be done without taking into consideration the client's cultural framework. Carballo-Diéguez went on to advocate that while these particular issues may apply to Hispanics, such cultural influences, or others, must also be considered when working with other minorities.

There is a lack of research surrounding HIV/AIDS from the psychology discipline during the 1980s. Tross and Hirsch (1988), however, did address mental health issues faced by people living with HIV and/or AIDS (PLHIV) which focused on similar themes being seen in the counseling literature. Specifically, they drew attention to issues such as the social discrimination faced by PLHIV, as well as the "pressure for life-style change" (p. 929) in relation to behaviors that put individuals at risk for HIV infection, and grief for those that were seeing friends and family die due to the disease. These identified concerns of stigma, multiculturalism (especially for those populations at particular risk), and behavior change associated with prevention continued to carry over into later concerns and research for those infected, affected, and at-risk for HIV.

2.2.2 1990s

The legal and ethical implications of working with clients who had HIV/AIDS again arose in the early 1990s. Harding, Gray, and Neal (1993) provided a review on mental health organizations' standards regarding client care. By the time the article was published, the AACD had officially already become the ACA, but the authors pointed out that during the time the organization was still the AACD (late 1980s), it put out a statement advocating for professional counselors to collaborate with other MHPs in providing treatment, and to be mindful of legal and ethical concerns (AACD, 1988). The AACD later went on to indicate that professional counselors should address their attitudes regarding HIV/AIDS, as well as counsel, educate, and advocate for individuals infected, affected, and at-risk of HIV (AACD, 1989). Harding et al. (1993) criticized the AACD for neglecting in their statement to provide priorities of care, a decision-making

model for addressing the ethical concerns of confidentiality, and how professional counselors might increase their knowledge base in working with this population.

Meanwhile, frustrated with the lack of representation of psychological research being done to address the needs of clients with HIV/AIDS, Hedge (1990) provided an overview of physical health literature where psychological factors had also been studied. There Hedge found that medical physicians were reporting mental health information about their patients and research participants with HIV, but it was being lost by being seen only by physicians and nurses and not by MHPs. Hedge summarized areas of particular interest for those providing mental health services to clients with HIV/AIDS. The list of issues Hedge found in common included mood disorders (especially depression and anxiety), lack of support, poor coping strategies, few valid therapeutic interventions, overall poor quality of life, and high rates of suicide. Hedge concluded with a call for effective interventions to increase coping strategies as a means to reduce mental health symptoms and consequent, significant rising suicide rates of PLHIV.

During this time period, the professional counseling literature was saturated with research focused on the high rate of suicide among HIV-infected clients. The prevailing message in such work was client safety and crisis intervention. Catalan and Pugh (1995) reported that studies at the time had ranges of suicide among PLHIV as high as 30%. Their concentration was different than many others, focusing instead on service providers, especially those providing mental health treatment, to be knowledgeable in assessing, addressing, and preventing suicide with this client population. They also alerted MHPs to the increase of requests by individuals dying of AIDS for physician-

assisted suicide, and noted that counselors needed to be prepared to consider the legal and ethical aspects involved in working with such clients.

Because of the high rates of suicide and the short life-expectancy rate at the time for HIV-infected individuals, death and HIV/AIDS was seen as being unavoidably linked. As a result, spirituality was a secondary theme which emerged throughout the counseling profession in the 1990s for these clients. Holt, Houg, and Romano (1999) provided the most comprehensive article on spirituality for professional counselors working with PLHIV. They described in detail the link between a terminal illness and thoughts of death and spirituality, as well as the "religious-based disenfranchisement" (p. 161) clients with HIV/AIDS faced. Such separation from a client's religion was seen as either self-inflicted (e.g. viewing the disease as punishment from God and therefore finding discord with their religion) or by religious establishments when finding out one of their congregants was infected. Such considerations emphasized the continued stigma, shame, and isolation experienced by those infected with HIV, largely because behavior was known to cause infection and therefore value judgment placed on those infected. These authors stressed the need for MHPs to be ready to address these client needs. Another area the authors highlighted was the need to address unique, cultural issues specific to each client, especially given the high rates of infections among minorities such as gay/bisexual men, Hispanics/Latinos, and the rising incidence rate among Blacks/African Americans at that time.

A final, large-scale element of mental health work for this population was released at the turn of century. Acuff et al. (1999) noted that to address mood, substance, and behavioral challenges faced by individuals living with HIV/AIDS,

> the Substance Abuse and Mental Health Services Administration (SAMHSA), the Health Resources and Services Administration (HRSA), and the National Institutes of health (NIH) launched the HIV/AIDS Mental Health Services Demonstration Program – the first federal initiative to focus on the mental health needs of people living with or affected by HIV. (p. 1)

The result was over $4 million dollars, spread out over four years, to community agencies across the country that were providing such services. Assessment needs data were collected, analyzed, and produced the printing and distribution of the *Mental Health Care for People Living with or Affected by HIV/AIDS: A Practical Guide* (Acuff et al., 1999). The guide documented over 200 pages of material on the issues facing clients with HIV/AIDS, how to provide effective treatment, and how to influence barrier reduction in accessing services. Acuff et al. (1999) reported that the primary mental health concerns for PLHIV included: mood disorders (especially anxiety and depression leading to suicidal ideation and attempts), substance abuse disorders, adjustment disorders (especially immediately following diagnosis) disease self-efficacy, self-esteem, stigma, medication adherence, disease disclosure and support issues, spiritual/wellness/hope issues, and transmission risk reduction. The guide had a significant impact on shaping the focus for clinical mental health, substance abuse, and behavioral counseling long into the mid-2000s. What is more, it stands as a testament of encapsulating these areas as key clinical concerns at that time, and they remain so still today.

2.2.3 2000s

Roberts, Kiselica, and Fredrickson (2002) argued that, because of the holistic approach taken by the profession, counselors are of great importance in working with clients infected with HIV. By this point, with the assistance of improved medication for

HIV, the terminal illness view of AIDS was beginning to dissipate and it was becoming known more as a life-long, chronic illness. The authors stressed the need for wellness of chronically-ill clients. They underscored the mind, body, and spirit connection to overall wellbeing when they reminded professional counselors how it "has been empirically demonstrated that beliefs, psychological mind-set, and attitudes have a direct connection to physiological responses" (p. 80). Because professional counselors treat clients from this perspective, the writers argued that such practitioners, combined with the utilization of interventions designed to address specific mental health needs, could significantly improve the wellbeing of clients with HIV.

More research by MHPs continued the charge with addressing the needs outlined by the SAMHSA guide. In the early 2000s, the work began to morph into materials which could be used to not only address PLHIV's clinical needs, but also the public health's needs to reduce HIV transmission through risk and harm reduction measures. The CDC began to take research being produced, largely by psychologists, and design and test effective behavioral interventions around the two needs of wellbeing for PLHIV (clinical focus) and public health transmission reduction (social psychology and public health focus). The "Diffusion of Effective Interventions (DEBIs)" program started with a handful of interventions and would grow into what is now known as the "High Impact HIV/AIDS Prevention Project (or HIP for High Impact Projects)" with over 74 risk/harm reduction interventions which focus on prevention of infection, and nearly a dozen interventions which address PLHIV's challenges such as mood and/or substance disorders and medication adherence. HIPs can be facilitated by any group or agency doing HIV/AIDS work. They are frequently funded by the CDC, or state or local health

departments. An understanding in each of the HIP's interventions is that mental and behavioral issues often interact with each other, posing further physical and mental health risks, as well as risk of HIV transmission.

Four such programs exemplify the involvement of the psychology discipline in primarily addressing individuals affected and at-risk for HIV, which simultaneously support PLHIV. One such program that works with PLHIV is "Healthy Relationships" (Kalichman et al., 2001), which focuses on daily life stressors and coping skills which prove to be barriers in keeping clients from disclosing their HIV status to their sexual partner(s). Such partners are both affected by HIV and at-risk for infection. This program, facilitated by licensed MHPs, is designed to assist clients on reducing barriers and facilitating communication about HIV-status disclosure. The second program of note is "Choosing Life! Empowerment! Action! Results! (CLEAR)", and is based both on cognitive behavior therapy (CBT) and psychological social action theory (CDC, 2009). CLEAR is designed specifically for PLHIV who also have a substance-use problem. It structures sessions with the client through things such as goal setting, identifying their ideal self, substance-use reduction, medication adherence, and status disclosure (CDC, 2009). Here again, the program works with someone already infected with HIV, but the social action theoretical approaches address those affected by, or at-risk of, HIV.

Two other programs, Popular Opinion Leader (POL; Kelly, et al., 1991; Kelly, 2004) and Mpowerment (Kegeles Hays, & Coates, 1996) are designed to target those at high risk of HIV infection. The POL program was constructed by a clinical psychologist and focuses on utilizing social networks to disseminate HIV prevention messages. A tenant of POL is to go into the community to reach at-risk individuals, whereas another

such project, the Mpowerment project, works by enticing individuals to come into a location (e.g. a drop-in center) to engage with others for prevention messages and heathy social interaction with peers (Kegeles, Hays, & Coates, 1996). Mpowerment is also based on social theories of human interaction and was created by a social psychologist in the late 1990s, although it did not take off as a CDC HIP until well into the new century.

In the last few years, work in professional counseling has continued to address the core issues faced by PLHIV (e.g. mood disorders, substance use disorders, etc.). A review of such current literature shows an increase of addressing medication adherence and the correlation between stigma, shame, and disclosure, especially at they relate to depression and suicidal ideation and attempts. Badiee et al. (2012) note that these interwoven issues for PLHIV do not necessarily change the longer someone has lived with their infection. The authors provide a strong caution to mental health providers that such issues frequently remain constant during the course of the disease.

2.2.4 Summary of Mental Health Needs

The work done by MHPs surrounding HIV/AIDS has largely kept time with the progression and knowledge of the disease itself and physical medical advancements. Over the past three decades, core issues experienced by PLHIV have been established as

- mood disorders,
- substance-use disorders,
- adjustment disorders,
- disease self-efficacy,
- self-esteem,
- adherence to medication,

- disclosing infection to others,
- negative social stigma,
- overall wellbeing, and
- prevention of transmission (through behavior change).

Professional counselors, with their approach to mental health from a strength-based, holistic, wellbeing standpoint, emerge as leaders in assisting the mental health, substance use, and behavioral needs of clients who are *infected* with HIV. Both professional counselors and psychologists attend to issues for those *affected* by HIV through a social lens handling issues of stigma, support systems, and grief/bereavement. Psychologist, on the other hand, stand out as the leaders in addressing the social aspects of those *at-risk* for HIV infection, especially as it relates to community-level prevention programming. The battle against HIV and AIDS, sadly, rages on. As long as infection rates continue to rise for a virus which has no cure and no vaccination, individuals infected, affected, and at risk of infection will need MHPs to be ready to assist with their particular needs.

2.3 The Need to Understand MHPs' Attitudes Towards People Living with HIV/AIDS (PLHIV)

2.3.1 The Construct of Attitude

In 1928, Thurstone made the declaration that attitudes could be measured. This claim sparked decades of debate for psychologists in defining exactly what is attitude (Gawronski, 2007). An encompassing definition became widely accepted in psychology when Eagly and Chaiken (1993) defined attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (p. 1).

They later reaffirmed that this definition attended to the "key features of attitudes – namely, tendency, entity (or attitude object), and evaluation" (Eagly & Chaiken, 2007, p. 582). Social psychologists describe attitude as "a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols" (Hogg & Vaughan 2005, p. 150). In an attempt to describe the hierarchy of attitude, social psychologists developed the "ABC Model of Attitude" (Eagly & Chaiken, 1998; Hogg & Vaughan, 2013; van den Berg, Manstead, van der Pligt, & Wigboldus, 2006) as follows:

- Affect – how a person feels about the target
- Behavior – how a person acts toward the target
- Cognitive – how a person thinks or feels about the target

In this view, attitude is a single dimensional construct, but it has components which interplay with each other to influence, develop, or change the attitude. This is how individuals are able to have a personal attitude about something, yet be able to suspend it in different scenarios when necessary, such as in a professional setting. The attitude about the target object is there, regardless of the situation. Yet the person's ability to realize they need to adapt given a particular setting affords opportunity for behavioral change toward the object, even if the affectional reaction is impacted (e.g., feel frustrated at having to keep bigoted comments to oneself). Such adaptation is possible, for example a MHP to have a dis-favorable attitude regarding a particular population, yet keep their behavior in-line when in professional settings. Their attitude toward the population may

not have changed as a whole, but the behavioral element can be displayed with a level of professionalism.

Such features of a definition are important because, although expressions of attitude may be witnessed, attitudes themselves are not tangible, visible things, which pose challenges for psychological investigations. Gawronski (2007) pointed out that a plethora of questions arise when considering the cognitive processes of attitudes, such as how are attitudes formed, changed, and maintained?; what is it about attitude that is automatic and what is controlled?; how do personal evaluations of an object differ from just knowledge of that object? Nevertheless, two things regarding attitude have become clear. First and foremost, attitudes exist and they can be measured in a variety of ways to answer specific questions about them (Eagly & Chaiken, 1993, 2007; Gawronski, 2007; Thurstone, 1927a, 1927b, 1928). Secondly, attitude plays "a significant role – if not *the* most significant role – for understanding social behavior" (Gawronski, 2007, p. 579, emphasis in original).

Consequently, two elements of attitude must be considered in relation to the current study. The first is that attitude can change based on knowledge and experience (Carney, Werth, & Emmanuelson, 1994; Gawronski, 2007; Hunt, 1996; Rose, Osborne, Hairston, Laux, & Pawelczak, 2015; Petty, Briñol, & DeMarree, 2007). Leading social psychologists on attitude meta-cognition, Petty, Briñol, and DeMarree (2007), took this verity even further when they contended that when new information conflicts with an existing attitude, the old attitude is replaced with the new, more or less favorable attitude at a high-order level of cognition. This ability of individuals to learn and grow, impacting change in attitude about an object, lends credence to the need for MHP to be

trained and experienced in working with particular demographics; in this case PLHIV. The second element of consideration for the proposed study of an attitude scale construction is what Eagly and Chaiken (1993, 1998) and Petty, Briñol, and DeMarree (2007) noted of attitude having a range. An attitude continuum spans from one end of "less favorable" to the other of "more favorable". Attitude about any entity (in this study, towards PLHIV) is not simply something that is a binary answer of "yes" or "no"; rather, individuals have a range of attitude from favorable to non-favorable.

To better illustrate this point, consider for a moment differing attitudes towards a population of people, for example towards those with disabilities. Even the term "disability" produces an attitudinal response where some may read this word with a more favorable response, while others may feel less favorable about it as they prefer the more "handi-capable" terminology. Most people have some form of attitude (either positive or negative) about this demographic, and such attitude is fueled by a few underlining facets. In a national, United Kingdom report which combined results from a number of studies, Aiden and McCarthy (2014) found attitude and resulting behaviors from individuals without disabilities towards those with disabilities. Attitude was seen as ranging from favorable to non-favorable, and included facets of attitude including comfort in conversing with disabled people, viewing them as inferior, and viewing them as less productive in society than able-bodied individuals. Their report also indicated able-bodied individuals had different attitudes between those with physical and intellectual disabilities, and that attitudes are expressed differently between home, school, and work environments. In addition to the attitudes by non-disabled toward disabled, there are other correlations to attitude investigation seen when considering attitudes surrounding

disabilities. For one, there are over a dozen measurement tools being utilized to investigate such attitudes (Antonak & Livneh, 2000; Tervo & Palmer, 2012). Further, it cannot be discounted that individuals with disabilities have their own attitudes about other people with same, and differencing, disabilities (Deal, 2003).

When considering the construct of attitude in relation to professionals, the question that needs to be addressed is if there is a difference between *personal* attitude and *professional* attitude. This study sought, after all, to find an appropriate level of one attitude construct, not two different constructs. There is an acceptance of defining differences between personal and professional ethics (Abbott, 1983; Koehn, 2001; Remley & Herlihy, 2014), as well as values (Jones, 2003; Levy, 1976; Spano & Koenig, 2007; Remley & Herlihy, 2014). Professions from an institutional standpoint have recognized this and have gone so far as to indicate what the expectation is for their professionals. An exemplar for this is found in the counseling profession which, through the American Counseling Association's *ACA Code of Ethics* (2014), make clear the values, principles, and expected ethical code of conduct expected by professional counselors. Such codes denote that, while an individual may have their own values or ethics, there are standards to which they are held from the profession's viewpoint. As is the case with professional counseling, many other professions expect to have the professional values and ethics supersede those of the individual.

It is also true there is a difference between personal attitude and attitudes *about* professions, professional work, and professionals. Take the common, stigma-fueled attitude toward mental health which often prohibits help-seeking behaviors with individuals who need it (Dorn, 2011; Reed, 2014; Vogel, Wester, & Larson, 2011).

There is even reason to expect personal attitude to have an influence on a person's professional development (Lachance, Benton, & Klein, 2007; Moon, 1999), including among professional counselors (Moss, Gibson, & Dollarhide, 2014; Skovholt & Ronnestad, 1992). In the context of professional competency, it could be said that the manner in which an individual behaves in their professional setting is related to skill, which of course is influenced by attitude, but not a separate construct of attitude. For example, a social worker may have an issue with certain types of people, but their ability to keep that bracketed from influencing their work with a client of that demographic is related to their skill, not the attitude itself.

In order to understand professional attitude, it should be considered from two vantage points: the individual professional and the profession itself. One definition of professional attitude provides for both of these perspectives: "professional attitude could be defined as predisposition, feeling, emotion, or thought that upholds the ideals of a profession and serves as the basis for professional behavior" (Hammer, 2000, p. 456). Following from this definition, Hammer suggested that what is often considered to be professional attitude is really better termed as professiona*lism*. By this, Hammer indicates that attitude expressed in the workplace, along with associated behaviors of that attitude, are combined to create a level of professionalism. This can be true of a profession (expectations on someone who calls themselves a member of a profession) and the individual (how one handles themselves in the professional environment). However, attitudes towards a profession, the environment, and the associated behaviors in the workplace are not professional attitudes; rather, they are attitude *about* these professional elements or professional behavior given the environment. Therefore, under this

definition, professional attitude is the *profession*'s ideals and how they are expressed, and separately the *individual's* manner of such. Keeping in mind, of course, that the definitions provided earlier which drive this study also includes the expression of attitude (see Eagly & Chaiken, 1993 and Hogg & Vaughan, 2013).

An example which supports this view from the professional perspective is seen with the nursing competencies as provided by the American Association of Colleges of Nursing's Quality and Safety Education for Nurses (QSEN; 2012). In it, they list what they term as attitude, identifying it as what their profession views as professional attitude. Close examination of these items, however, revels a mixture of values and behaviors, not just attitudes. "Value planned change" (p. 6), and "value the process of risk reduction in health systems" (p. 7), are examples of what the nursing field views as part of the nursing profession's attitude. However, it should be noted that from the psychological perspective, values are not attitudes; they are *a part* of what constitute an attitude, certainly, but values and attitudes are not synonymous. Another example of the nursing field's professional attitude from the nurse's competencies include "model behaviors reflective of a commitment to high quality outcomes" (p. 5). Here, in fact stated in the very competency, is the behavioral expression of an attitude, but not an attitude per say. In social psychology, we do not define attitude *as* behavior. Behavior may be a result of an attitude, or an expression of an attitude, but behavior and attitude are not the same thing. As discussed, however, many professions consider professional attitude to include an element of how the behavior is expressed (see Hammer, 2000 and Ratts, Singh, Nassar-McMillan, Butler, & McCough, 2015).

It could be argued that what such professional competencies as the nurse's training materials intend is to denote the nursing profession's attitude; what professionalism is in their field. The individual within that field then may have their own professional attitude towards the profession itself, or how they behave within it. The connection between attitude and professionalism can certainly a confusing one; but it is not the case that it means there is a difference between personal and professional attitude. Rather, an individual's attitude is something they carry with them regardless of setting, and how they handle that in the work place speaks to their level of professionalism. Further, for helping professionals such as the nurses being trained or mental health professionals being looked at for this study, being able to manage that personal attitude in the professional setting – positively or negatively – speaks to their competency as a helping professional.

When considering an investigation regarding attitude it is important to remember these discussed elements of attitude. In summary, attitude is a cognitive process of evaluating a target object, and it is the quintessential element of understanding social interactions. Attitude has affect, behavior, and cognitive elements associated with it. Attitude is always something of a personal nature. Expression (or lack of expression) of an attitude in the professional setting is an element of competency (i.e., skill) and of professionalism (i.e., expression of attitude), but that does not imply a difference between personal attitude and professional attitude. Attitude is interwoven with knowledge and behavior, where they all influence one another. Attitude can be measured, and must be seen as a continuum (e.g., from more favorable to less favorable, or favor to disfavor) in relation to the target object. Once these are accepted premises regarding attitude itself,

the discussion must move to why it is important to specifically understand MHPs' attitudes of HIV/AIDS.

2.3.2 HIV Prevalence

Turning focus back to HIV and AIDS, according to the CDC, in the U.S., there are currently over 1.2 million individuals over the age of 13 living with HIV infection (CDC, 2015c). The CDC epidemiological data indicates that HIV incidence rates are around 50,000 new infections per year (CDC, 2015c). Said another way, every 10 minutes an American is infected with HIV. Although anyone that comes into contact with HIV-infected fluids is at risk of infection, certain demographics continue to be impacted more than others. Youth ages 13 to 24, for example, account for 26% of new U.S. HIV infections (CDC, 2015b). Supplementary, Black/African Americans are the most disproportionately affected, accounting for only 12% of the population, yet 44% of new HIV infections (CDC, 2016a). Finally, men-who-have-sex-with-men (MSM) make up 63% of all new infections (CDC, 2015a). A person may be a member of more than one of these three primary risk groups, which accounts for the incidence rates to be reported at over 100%. In fact, the CDC (2015c) states that individuals of all three demographics (Black/African American, MSM under the age of 24) are at the most risk of HIV infection. In February, 2016, the CDC released the shocking announcement that statistically speaking, based on continued increases in incidence rates over the past decade, at least half of all Black/African American MSM will be infected with HIV in their lifetime (2016a, 2016b).

Such figures demonstrate what Rose, Osborne, Hairston, Laux, and Pawelczak (2015) aptly noted, when they said MHPs "can no longer contemplate *if* they will have

clients infected, affected, or at-risk for HIV/AIDS, but rather *when* they will counsel such persons" (p. 10). What is more, MHPs who "work with MSM, youth, and/or Black/African Americans must be on particular readiness given these populations contribute to the majority of new HIV infections" (p. 10). Considering MHPs will work with PLHIV, and that PLHIV have a unique continuum of mental health needs, the question arises if MHPs are competent to provide services.

2.3.3 Competence

Given attitude is a foundational piece to social interaction (Gawronski, 2007), it would seem nonsensical to remove attitude from the MHPs competency equation. Sue et al. (1982) reasoned that there are three elements – knowledge, attitude, and skill – as the basis for determining competency in working with multicultural clients. Although this three-pronged structure has been debated (Constantine, Gloria, & Ladany, 2002; Ratts et al., 2015), it continues to be the standard in developing competency scales for helping professionals. The Association for Multicultural Counseling and Development (AMCD), a division of the ACA, structured the original *Multicultural Counseling Competencies* (Arredondo et al., 1996) on the premises of knowledge, attitudes/beliefs, and skill. Similarly, the American Psychological Association (APA; 2008) also base their *Multicultural Guidelines* on knowledge, attitudes/beliefs, and skill. MHPs recognize that the three elements of competency are often intertwined, such as how knowledge directly impacts both attitude and skill (Arredondo et al., 1996; Carney et al., 1994; Hunt, 1996; Shrum, Turner, & Bruce, 1989).

In 2015, the AMCD released the updated multicultural counseling competencies, which enhanced the view of counseling competency to include both multiculturalism and

social justice. The *Multicultural and Social Justice Counseling Competencies* (*MSJCC*; Ratts et al., 2015) conceptualize competency as having four layers which influence competency: (1) counselor self-awareness, (2) client worldview, (3) the counseling relationship, and (4) counseling and advocacy interventions. Within each of these layers, the *MSJCC* continued to support the view of knowledge, attitudes, and skill as foundational components to competency, but also added the new element of action. For professional counselors, the scope of competency was forever altered; direct, specific action is required to round-out the competency of multiculturalism and social justice. Although the new action component is likely, on the surface, to be considered as relative to social justice only, the *MSJCC* actually called for action within the layers of identity as well. For example, to address one's own self-awareness, counselors are called to action to employ activities such as cultural immersion and engagement in self-reflection activities, as ways to increase their competency in working with varying populations. With the advent of the *MSJCC*, this study was based on the four competency elements of knowledge, attitude, skill, and action.

Rose et al. (2015), seeking to understand professional counselors and counseling students' knowledge base of HIV/AIDS, developed the "Professional Counselor HIV/AIDS Knowledge Questionnaire (PC-HA-KQ)". In their study, professional counselors and counseling students in Ohio were shown to have more knowledge of HIV and AIDS than the general public. Given it is a newly devised instrument, the PC-HA-KQ needs further research not only with professional counselors, but with other MHPs as well (e.g. psychologists). Nevertheless, the PC-HA-KQ addresses the knowledge element of competency only, not attitudes towards PLHIV.

Both the ACA (2014) and APA (2008) indicate the ethical obligation of MHPs to work with diverse populations. In order to address this directive, standards have been implemented when training MHPs. Psychologists, for example, are directed by multicultural education as established by the APA (2002). Professional counselors are guided not only by the *ACA Code of Ethics (*2014) which frequently mandates multicultural approaches in all forms of professional counseling activities, but also in counselor training programs by the Council for Accreditation of Counseling and Related Educational Programs' (CACREP) *2009 Standards* (2009). CACREP (2009) infuses multicultural considerations throughout the training standards of professional counselors, not the least of which is that it should be a core component of a counselor's professional identity (Standard II.B.1). This is accented further in Standard II.G.2.a which calls upon professional counselors to consider "characteristics and concerns within and among diverse groups" (p. 10). What the ACA, APA, and CACREP are all lacking, however, is clear direction for how to address the unique characteristics of minority culture groups that are not relative to race or ethnicity (such as PLHIV).

It has been argued that "investigators should identify ways of determining clinicians' self-perceived competence in working with non-racial and non-ethnic cultural groups" (Constantine et al., 2002). Herein lies the essence of proposing a MHP, PLHIV attitude scale. It is under this view of extending the multicultural competency lens to include other minority clients that an undertaking to investigate and establish an appropriate attitude instrument is being proposed. As previously noted, it could be one component (i.e. attitude measurement) of a larger instrument addressing competency, and

potentially influence mental health training programs, relating to working with this population.

2.3.4 Diversity

It may be difficult for those not heavily involved in working with PLHIV to consider this demographic as a "culture" unto itself. Culture is often cogitated by other characteristics such as race and ethnicity, but in reality culture has been defined by a variety of scholars in a myriad of ways. Barnouw (1979) defined culture as "stereotyped patterns of learned behavior which are handed down from one generation to the next through the means of language and imitation" (p. 5). Schein (1999) suggested culture is the "shared, taken-for-granted assumptions that a group has learned throughout its history" (p. 29). Mental health disciplines even perceive constructs of culture differently depending on their ideological view of humanity. Professional counseling, for example, relies on the ACA's definition of culture as "membership in a socially constructed way of living, which incorporates collective values, beliefs, norms, boundaries, and lifestyles that are co-created with others who share similar worldviews comprising biological, psychosocial, historical, psychological, and other factors" (ACA, 2014, p. 20). The APA's definition of culture includes "belief systems and value orientations that influence customs, norms, practices, and social institutions…[and] the embodiment of a worldview through learned and transmitted beliefs, values, and practices." (APA, 2008, p. 8).

The APA's full definition, however, includes assumptions that cultural groups would share the same religious and/or spiritual beliefs, as well as political, economic, and ecological similarities. The APA's definition would seem to be one which would leave out a number of groups universally seen as cultural groups whose defining characteristics

are not necessarily the same in these aspects. Gay culture, for example, is not defined by all sharing the same religious beliefs or even political affiliations. However, the core elements of all definitions of culture include shared attitudes, values, and beliefs, coupled with the use of passing down traditions from one generation to another. Based on this cultural defining foundation, individuals infected with HIV, and even those significantly affected by HIV/AIDS, should be seen as a culture group. Not doing so actually discounts and disrespects their unique attributes. There is shared history, attitudes, values, and beliefs that are passed down from one generation to another within this population. This group of people are socially constructed, and share biological traits (the virus itself). Even those cultural definitions which require the use of language, art, and symbols to define a culture must recognize this is present with HIV/AIDS. Consider language shared by this group yet not common for outsiders such as "viral load", "CD4 count", "AZT", "ID", "MSM", or "Magnetic Couple". Symbols are also present, such as the AIDS Memorial Quilt or the red ribbon for AIDS awareness, which was the first support ribbon even conceived and upon which all support ribbons are now based. Consider for a moment the HIV/AIDS culture having created the first support ribbon, a symbol which many other groups and cultures have since adopted over the years. Research in identifying and classifying this population as a distinct culture group is significantly lacking. In fact, one is hard pressed to find any recognition of this group as a culture in the professional literature, suggesting it should be an element of investigation. PLHIV (and by extension those affected) are not yet properly recognized in the literature as their own culture, but it should be clear to helping professionals that at a minimum they are a group of individuals with unique diversity and should be treated as

such. Again, this calls for warranting of competency evaluation in working with PLHIV, because there just is not enough literature available to determine such competency. Although the knowledge component is beginning to be addressed (Rose et al., 2015), nothing has been done yet relative to MHPs' attitude towards PLHIV. This is not surprising when one considers that there are no appropriate measurements available with which to launch such investigations.

2.4 Evaluation of Current Instrumentation

2.4.1 AIDS Attitude Scale (AAS[1] – First Version, 54-Items)

The first tool used to investigate attitudes regarding AIDS was authored by Shrum, Turner, and Bruce (1989). In light of continued increases in patients being diagnosed with AIDS, the authors were primarily concerned with education programs which would directly impact knowledge and behavior surrounding the disease. They suggested that attitude influenced knowledge and behavior. They proposed that to improve education programs which addressed knowledge and behavior about AIDS, attitudes towards AIDS had to first be understood.

Utilizing a panel of AIDS expert judges, Shrum et al. (1989) reached an appropriate level of content validity for a questionnaire of 67 items. A Likert scale was utilized ranging from *strongly agree* (5) to *strongly disagree* (1). The initial questionnaire was administered with a final sample of 146 participants from an undergraduate health education program. Statistical analysis of corrected item-total correlation coefficient indicated that 54 of the questions reached statistical significance ($p < .001$). This set of 54 questions became the AAS[1] which was then administered to a different sample of 131 undergraduate health education students. With this sample,

analysis of variance (ANOVA) was run and showed significant differences between sex (females being more tolerant than males) and age (the older the participant, the more tolerant). A factor analysis of the AAS[1] suggested 12 factors involved with the instrument, with three of those factors accounting for the largest percent (45%) of the variance. Based on the questions involved, the authors suggested that these three factors were related to "Contact/Proximity", "Moral Issues", and "Legal/Social Welfare Issues" (p. 228).

The benefits of this initial scale addressing AIDS attitudes start with the fact it even existed; that researchers recognized the need to better understand the attitudes surrounding the disease and those suffering from it. Shrum et al. (1989) discussed further how "knowing what attitudes are held by a given population provides…important information for planning…based on the needs and concerns of that population" (p. 229). This same argument, which will later be detailed further, supports that attitudes are an important element in mental health competency evaluation and educational instruction.

The drawbacks of this instrument, however, are many. For one, 54 items make a lengthy instrument which poses issues for participation completion, and also for narrowing down specific factors loaded within the scale. The authors themselves note 12 factors which showed statistical weight for the instrument, but only three were able to be identified. This suggests the instrument is measuring a variety of elements which may or may not be relative to attitude towards AIDS. Another drawback is that the only validity evidence they provided was content (by their panel of judges), and the only reliability by the internal consistency identified in the item statistical analysis. The authors indicate further study with different populations, with questions added, removed, or reworded

more applicable for non-health education students, would be required to provide evidence for other types of validity and reliability (e.g. construct, predictive). In other words, this instrument only indicates possible attitudes of health education undergraduate students, and is not generalizable to other populations. It is possible this contributes to why this instrument is not seen being utilized in further professional research.

2.4.2 AIDS Attitude Scale (AAS^2 – Second Version, 21-Items)

Another instrument to investigate attitudes regarding AIDS was created by Froman, Owen, and Daisy (1992) and focused on nurses. The initial AAS^2 consisted of 83 items "based on the review of the literature" (p. 150). Instead of basing the AAS^2 on the original AAS^1, however, these researchers created an entirely different set of questions. When attempting to better understand why a completely new instrument had been created instead of building from the existing AAS^1, the authors deny the existence of the AAS^1 entirely, even when it had been published four years prior to the AAS^2 (R. D. Froman, personal communication, May 5, 2014). As a consequence, although some of the themes for the two instruments are similar (e.g. concerns of infection, AIDS as a punishment for behavior) the questions themselves are different.

Froman et al. (1992) reduced the number of items from 83 to 27 based on the decisions of a panel of judges identified to be experts in the field of AIDS. The items were arranged on a Likert scale ranging from *strongly disagree* (1) to *strongly agree* (6). The 27-item AAS^2 was administered to nursing students (n = 167) and a factor analysis revealed three categories of primary interest (explaining 76% of the variance). These categories were "Empathy", "Unrealistic Concerns", and "Blame-the-Victim" (p. 151). Their fourth category they expected to see, coined "Homophobia", failed to produce

common factor loadings and thus those six relating questions were dropped, leaving the final instrument at 21 items. Of note is that even when claiming questions related to homosexuality and not AIDS (suggesting the stigma associated at that time of it being a disease only affecting gay males), questions remained on the instrument which referred to attitudes toward homosexuality instead of attitudes towards AIDS. An example is, "If I found out that a friend of mine was homosexual, I would not maintain the friendship" (p. 151). Such questions do not look at attitude towards AIDS; they look at attitude towards homosexuality.

The AAS^2 was then administered by Froman et al. (1992) to a different sample of nursing and education students (n = 203) in a test/re-test scenario with the second test occurring at one and three week intervals. This 21-item AAS^2 produced what would become the final factors of Avoidance (Unrealistic Concerns and Blame-the-Victim being consolidated into one category with 9 items) and Empathy (12 items). The researchers then analyzed the AAS^2 first by looking at internal consistency, reporting Cronbach alpha levels overall of .85 for the "Empathy" factor, and .90 for the "Avoidance" factor. Standard approaches to considering alpha levels would consider these results as "good" or even "strong" for internal consistency. Upon closer examination of the questions themselves, however, it becomes clear that the AAS^2 is not suitable for the unidimensionality of AIDS attitudes. In other words, attitudes towards other elements are being asked and then included in the "Avoidance" factor.

This first becomes evident when considering the original "Blame-the-Victim" factor which was consolidated down along with "Unrealistic Concerns" to the single factor of "Avoidance". Concerns of infection by a patient would seem to be acceptably

renamed as “Avoidance”, but it seems nonsensical to collapse “Blame-The-Victim” in along with it. Upon examination of the “Avoidance” questions themselves the question of unidimensionality becomes even more apparent. Three questions that deal with intravenous drug use (IVDU) and AIDS are in the factor of Avoidance, but it is not possible to know with the questions if the “avoidance” is relative to AIDS, of those who do illicit drugs, or those who use needles to use drugs. The second issue when considering the Avoidance factor on the AAS^2 relates to the four questions regarding homosexuality and not AIDS. Here again, it is ambiguous if the attitude fueling the answer of these questions is about the construct of attitude towards AIDS as the AAS^2 sought to investigate, or of the attitude towards homosexuality construct. What is more, two of the homosexuality questions do not even mention AIDS, they merely ask an attitude question about homosexuality, which clearly indicates a respondent is indicating their attitude about that sexual orientation. Doing so decreases the instrument’s ability to measure one attitude construct (i.e., attitude towards AIDS) at a time when the items bring in attitudes about differing constructs (e.g., homosexuality).

These researchers’ Avoidance factor is, at least in part, loaded with questions relative to the avoidance of homosexuals and IVDU, not of those with an AIDS diagnosis. Therefore, where the original alpha of .90 sounds initially to be a strong indication of internal consistency for Avoidance of AIDS, in reality it includes victim blaming and attitude questions about constructs other than just attitude towards AIDS. Therein lies the first issue with using the AAS^2 for MHPs because there is already of the lack of one construct being investigated by the instrument.

The second reason why the AAS^2 is not an appropriate measure for MHPs is that it was created specifically for nurses and is not generalizable to other populations (Froman & Owen, 1998). The final concern is the authors contend their instrument is only appropriate for test/re-test situations and does not provide a true view of AIDS attitudes if only administered once. As explained in detail previously, the proposed new instrument for MHPs would be included later as a piece of a larger, overall competency scale, thus a test/re-test scenario is ill-advised. The goal would be to ensure an instrument can appropriately measure attitude towards PLHIV with a respondent only needing to complete it one time.

One positive component of the AAS^2 is the identification of the avoidance and empathy factors. These were considered by the Content Evaluation Panel (CEP) which was formed to create the MHP-HAAS. The CEP also found utility it utilizing themes of avoidance and empathy when designing their levels of measuring the attitude construct. How these, and the other levels, were finally aligned to the approach of measuring attitude towards PLHIV will be further detailed in Chapter 3.

2.4.3 AIDS Attitude Scale – General Public (AAS-G)

In continuing their work, Froman and Owen (2001) took the AAS^2 and reworded it for the general public, creating the AAS-G. Three participant samples were used to test the AAS-G. The procedures followed the same test/re-test pattern as the AAS^2, except that the re-test completion took place two days after the first, instead of weeks apart as with the AAS^2. Of note is that a large portion of the samples used for the AAS-G testing were also registered nurses and/or nursing students, suggesting a fairly homogeneous sampling as the AAS^2 even when it was intended to investigate non-medical personnel.

With the questions reworded for use by the lay person, and the removal of medical-related jargon and situations, the AAS-G would sound on the surface to be applicable for use with MHPs. In truth, such use of the AAS-G would negate the ability to investigate specific attitudes relating to issues MHPs would be exposed to that the general public would not (e.g. mandated reporting). Additional disadvantages of the AAS-G come from the same as its AAS^2 predecessor. Specifically, questions ask about avoidance of homosexuals and IVDU and not just of AIDS, and it also requires test/re-test to determine a samples' attitude.

2.5 Creation of a New Instrument

2.5.1 Identified Need of a New PLHIV Attitude Scale

Each of the past instrumentation to investigate attitudes have their merit, but in the end none of them addresses consideration of MHPs' attitudes. Most importantly, these instruments look at attitudes towards *AIDS* and not *HIV*. The tools intermix questions about HIV with those of AIDS, although overall refer to the attitudes as AIDS specific. It is well documented that the course of HIV is a disease process which could culminate into an AIDS diagnosis (CDC, 1985; Joint United Nations Programme on HIV/AIDS [UNAIDS], 2011; U.S. Government, 2013b). HIV disease progresses through three stages: (1) acute infection (HIV infection), (2) clinical latency (living with HIV), and (3) AIDS (when a certain level of damage has been done to the body as a result of compromised immune system) (U.S. Government, 2013b). All past attitudinal tools are looking solely at the third stage of a disease process which seems illogical. An instrument which considers mental health workers' attitudes about HIV *and* AIDS is warranted as they provide services to individuals at all stages of HIV disease. More

importantly, a shift in addressing the attitude as one towards a demographic, namely people living with HIV and/or AIDS (PLHIV), and not the virus (HIV) or disease (AIDS) was acknowledged. Thus, the new instrument was seen as one where the measurement is of attitude towards PLHIV, not towards HIV/AIDS.

Third, the past instruments include questions about attitudes towards homosexuality and IVDU, not just HIV/AIDS. To measure a single construct properly, the instrumentation should measure one construct at a time (i.e. unidimensionality), in this case attitudes towards PLHIV. It should not deal with attitudes about other constructs such as sexual orientation, not only because HIV is not a gay disease but also because asking such questions on an instrument measuring attitudes towards HIV disease implies the gay/bisexual stigma of the disease.

The final reason an instrument specific to MHPs' HIV/AIDS attitudes should be explored relates to considerations of elements specific to the professions. As previously discussed, knowledge, skill, action, and attitude towards a diverse client population are the basis from which competency is determined. When mental health providers experience legal and ethical concerns unique to this diverse client population (e.g. client privacy and confidentiality, mandated reporting, and appropriate disease-related referrals) their decision making is based on their competency and therefore, in part, based on their attitudes. Such components relative to PLHIV attitudes have yet to be investigated, yet should be as an important piece in understanding competency of MHP working with such diverse clients.

2.5.2 Conclusion

As discussed, a current evaluation tool for MHPs' attitudes surrounding PLHIV does not exist. Previously created instruments are not appropriate for these professionals because they lack measuring only one construct of attitudes towards PLHIV; almost exclusively address AIDS but not HIV or the overall disease process; and do not include situations experienced MHPs who work with HIV/AIDS-impacted clients. Further, PLHIV are a diverse client population and therefore appropriate tools are needed to address MHPs' knowledge, attitude, action, and skill under a multicultural and social justice competency lens. This research proposed a "Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)", which would provide a tool that targets MHPs to better understand their attitudes about the clients with whom they work. Additionally, it will have future benefit in enhancing training programs, and later inclusion to a more encompassing competency scale for working with PLHIV.

Chapter Three

Methods

3.1 Overview

This study sought to develop and validate an instrument specifically designed to measure the attitudes of mental health professionals (MHPs) towards people living with HIV and/or AIDS (PLHIV). A panel of HIV/AIDS experts was convened to construct the initial attitude scale which was then piloted through an online survey with a small sample of the MHP population. That pilot was done as a means to calibrate the instrument's utility of the rating scale categories, wording of the items, and length of the instrument. The data from the initial pilot sample were analyzed with the Rasch Measurement Model (RMM; Rasch, 1960, 1980) to assess the extent to which the instrument measured attitude towards PLHIV. The diagnostics intended to assist in this included item and person fits, Rasch factor analysis, rating scale category functioning, reliability and separation, and item-person targeting. The goal was to then determine if any adjustments to the instrument were needed before being administered online to a larger sample of the MHPs, and analyzed with the RMM. The end goal was to construct and validate a qualitatively meaningful and statistically defensible scale that measures MHPs' attitude towards PLHIV.

3.2 Research Questions

This study sought to construct and validate a measure of attitude towards PLHIV by answering the following research questions:

1. To what extent do the participants use the MHP-PLHIV-AS rating scale categories as intended?
2. How well do the items separate participants into statistically distinct and meaningful levels?
3. To what extent do the items form a reliable (stable) line of inquiry (ruler)?
4. To what extent is the MHP-PLHIV-AS measuring a unidimensional construct (attitude towards PLHIV)?
5. Is the item ordering of the MHP-PLHIV-AS meaningful?

3.3 Research Design

3.3.1 Theoretical Development

Attitudes are social constructs which help inform our understanding of social behavior (Gawronski, 2007). Attitudes can be measured (Thurstone, 1927a, 1927b, 1928). Furthermore, attitudes vary across a range which can be described in ways such as from "more favorable" to "less favorable", or perhaps even from "good" to "bad". When considering the attitude towards PLHIV, questions arise such as what exactly is that range? How can that range be measured? And perhaps even more importantly, why even measure it at all?

Being able to better understand the attitudes of MHPs is important for training MHPs properly, as it is in their work with clients. MHPs are not exempt from having, developing, and adapting a variety of attitudes just as any human being. It is not always

clear what a MHP's attitude is towards a particular group of people or specific client, yet that attitude plays a critical role in the competency (i.e., knowledge, attitude, skill, and action; see Ratts, Singh, McMillan, Butler, & McCullough, 2015) of MHPs working with clients (American Psychological Association [APA], 2008; Arredondo et al., 1996; Sue et al., 1982).

Social and behavioral scientists frequently discuss practitioners' competency to work with clients of different races and/or ethnicities than the practitioner (Arredondo, 1996; Constantine, Gloria, & Ladany, 2002; Ratts et al., 2015; Sue & Sue, 2012). However, groups consisting of other types of diversity (e.g., Deaf, handi-capable, sexual orientation) also require multiculturally-competent approaches to service provision (Robinson-Wood, 2013). One such group is people living with HIV and/or AIDS (PLHIV). Competency in working with PLHIV, and those affected by HIV/AIDS, is different than other cultural groups because of the unique preconceptions, stigma, and even fear of a contagious virus which can lead to significant health problems. These issues are unique for the PLHIV population and therefore require specific competency in working with them. The ability to develop such competency impacts the training standards and needs of developing MHPs, as well as continuing education for MHPs already working in the field. Yet, there is no PLHIV attitude scale with demonstrated unidimensionality, nor any designed for MHPs as a means to investigate and gauge the attitude element of competency working with PLHIV. The paucity of an instrument designed to measure MHPs' attitudes towards PLHIV is a problem because it leaves mental health fields unable to determine if clinicians are able to meet the needs of PLHIV. Because prevalence of infection continues to increase (Centers for Disease

Control and Prevention [CDC], 2015a) and this population has unique mental health needs which are best addressed by proper mental health services (Acuff et al., 1999; Knox, Davis, & Friedrich, 1994;), HIV/AIDS-competent MHPs are essential (Rose, Osborne, Hairston, Laux, & Pawelczak, 2015).

At the core of this study was the recognition that the MHP fields lack an appropriate instrument to understand MHPs' attitude towards PLHIV, what the range of that attitude is, and how to measure it. Understanding this attitude will contribute to competency understanding and training of MHPs in providing appropriate mental health services for PLHIV. It is from this vantage point that the study was designed around measurement construction. The construct theory for this study was originally that attitudes towards PLHIV was a single dimension which could be measured. That measurement would have levels of the construct that range from less favorable to more favorable in the following manner in descending order:

- Affirming
- Accepting
- Empathetic
- Compassionate
- Impartial
- Indifference
- Dismissive
- Alienating
- Punishing
- Violent

As will be explained in further detail in the coming chapters, the original construct theory of a single dimension was not supported by the data. Rather, the data provides evidence for a revised construct theory of two dimensions for the attitude towards PLHIV construct. The study results which lead to this theory revision will be communicated in detail in Chapters 4 and 5.

3.3.2 Framework for Design

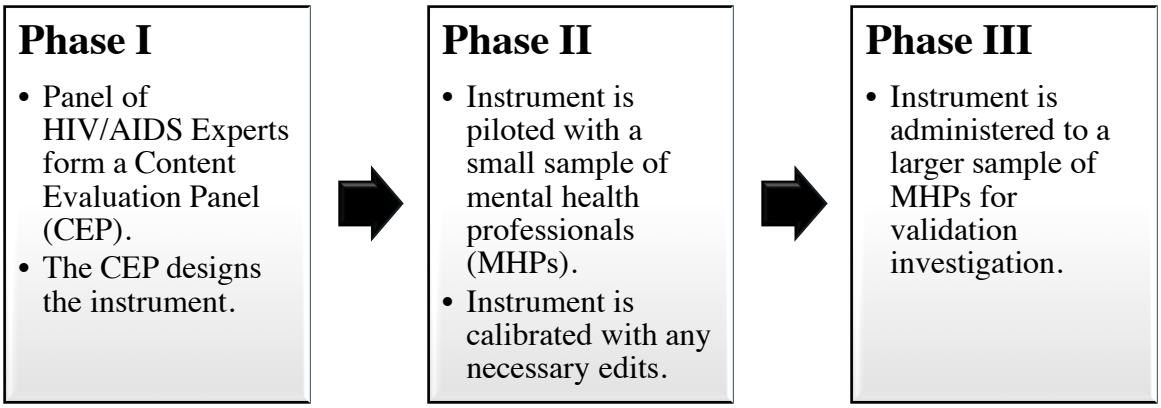
Messick (1980) articulated that "validity is the overall degree of justification for test interpretation and use" (p. 1014). Said another way, validity is not something which is measured; it is an evaluation of a body of evidence. In Messick's view, validity is not differentiated into "types" such as criterion-related, predictive, content, or construct, but instead it is the overall judgment made from the data produced. An instrument's construction, administration, and statistical analysis, therefore, should be questioned for its validation as a whole to determine if it measurers the characteristic(s) it is intended.

Messick's characterization of validity requires a shift in thinking for many social- and behavioral-science researchers. Wolfe and Smith (2007) built on Messick's foundational view about validity by advocating that researchers should consider "validity as a unified concept for which multiple types of evidence are appropriate, depending on the nature of the interpretations and uses of the measures" (98-99). They provided practical process recommendations for design and instrument development which, when followed, document evidence of addressing six aspects of validity: content, substantive, structural, generalizability, external (convergent and discriminant), and consequential. Their process takes the form of five activity groups. This study followed these five activities for the purpose of developing of a new measurement tool. The five activities,

utilized prior included (a) defining the purpose, (b) identifying the specifications of the instrument, (c) developing the items on the instrument, (d) utilizing expert reviews, and (e) pilot testing.

Defining the purpose and the specifications of the instrument were discussed in the previous two chapters. Specifically, it was argued that an appropriate instrument to measure the attitudes of MHPs towards PLHIV is important to address MHPs' competency in working with the diverse PLHIV population, yet such an instrument does not exist. Past instrumentation (Froman, Owen, & Daisey, 1992; Froman & Owen, 2001; Shrum, Turner, & Bruce, 1989) was found inappropriate as they measure only one stage of HIV disease (Stage 3, AIDS), do not have an appropriate level of unidimensionality (measuring only one attitude), and do not handle attitudes regarding situations unique to MHPs. The goal was to design the MHP-PLHIV-AS with specifications that meet the need of culturally competent MHPs, while avoiding the pitfalls of the past instruments. The remaining activities are discussed in greater detail in this section as the process of the instrument's development is detailed. The authors' reasoning for following the Wolfe and Smith (2007) model was not only to address the concerns that may arise by addressing validity as a whole instead of separate entities, but also because in so doing it sets the stage for appropriate analysis under the RMM. Detail for utilizing the RMM will be given later when discussing the data analysis for this study. First it should be made clear that the design framework followed a three phase process as outlined in Figure 3-1.

Figure 3-1: *Phases of the Study*



3.4 Phase I

3.4.1 Phase I: Content Evaluation Panel (CEP)

The study occurred across three phases. Phase I included the initial construction of proposed items for the "Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)". Like other sources in survey development (Ayre & Scally, 2014; Lawshe, 1975; Wilson, Pan, & Schumsky, 2012), Wolfe and Smith (2007) advocated for the involvement of experts in constructing a new measurement. In an effort to enhance clarity of the MHP-PLHIV-AS's content aspect of validity, an established and accepted statistical manner of item inclusion was used for this study; namely, the approach first introduced by Lawshe in 1975.

Lawshe (1975) proposed that individuals who are experienced at performing the task being investigated are qualified to determine the domain (and its categories) of investigation. To that end, Lawshe conveyed both a method and quantitative measurement to help improve content validity of an instrument through the meticulous development of its items. Lawshe indicated that a panel of experts, a "Content Evaluation Panel" (CEP; p. 566) be constructed to define the domain, facets, and relevant

items accordingly. The CEP then independently ranks the items on a 3-point scale of "essential, useful but not essential, or not necessary" (p. 567). Lawshe suggested that when all members of the CEP view an item as "essential", it is then logical to retain the item; conversely an item is discarded if all experts say the item is "not necessary." Because items will have a range of CEP members' endorsement, statistical significance of what is essential is required. To that end, a CEP must have at least five members (Lawshee, 1975; Wilson et al., 2012) in order to have a span large enough to account for varability in what is considered essential.

During Phase I, experts in the field of HIV/AIDS were recruited to form a CEP and collectively construct a set of statements that served as the MHP-PLHIV-AS items. The CEP comprised of six HIV/AIDS experts. With a panel of this size, all members needed to find an item essential in order for it to be included based on statistical significance (Lawshee, 1975; Wilson et al., 2012). The diversity of the panel included the following, with their years of experience at the time of CEP work noted:

- A State of Ohio Public Health Official (HIV/AIDS experience of 26 years)
- An Ohio dually licensed professional counselor and social worker (HIV/AIDS experience of 25 years)
- An Ohio county Health Department Disease Intervention Specialist (HIV/AIDS experience of 18 years)
- A second Ohio county Health Department Disease Intervention Specialist (HIV/AIDS experience of 2 years)
- An Ohio licensed professional clinical counselor (HIV/AIDS experience of 24 years)

- A HIV-positive individual (HIV positive for 18 years)

3.4.2 Phase I: Item Construction

Two organizational structures assisted in guiding the CEP's instrument development. First, a pre-determined script (see Appendix A) was reviewed with the CEP. he script outlined the problem, background and purpose of the study, the identified need for a new instrument, and explained the CEP's role in the instrument's construction. Second, they were guided through the *Steps Leading to a Straight Line: Constructing a Variable* (Enos, 2008; see Appendix B), a framework that helps individuals construct an instrument along a unidimensional linear continuum investigating a single variable. The steps associated with this process are:

1. Describe the variable in a few words
    - After discussion, the CEP reached a unanimous agreement to phrase it as "attitude towards people living with HIV/AIDS."
2. Identify the theoretical approach guiding the research
    - The CEP reached a unanimous agreement to consider the measuring of the variable (i.e., "attitude towards PLHIV") along a continuum ranging from "less favorable" to "more favorable."
3. Describe how a person with a less favorable attitude towards PLHIV would think, feel, and behave
    - Originally, the CEP described this as "punishment," or the idea that such a person would seek punishment for individuals who were HIV-positive (e.g., legal prosecution for transmitting HIV to others). Over the course of four meetings, the CEP's final decision

was that the lowest category was "violence." This level represented the type of person who holds unfavorable attitudes and who considers HIV/AIDS a death sentence or a punishment from God. Such an attitude would not necessarily entail behavior on the part of this type of person, but rather captured the attitude that someone or something else should be violent against a PLHIV (e.g., God would cast PLHIV into hell for their sins which resulted in HIV infection in the first place). This lowest category would later be termed "violent" by the CEP, with the second-lowest category on the favorable scale being "punshing."

4. Describe how a person with a more favorable attitude towards PLHIV would think, feel, and behave

    - Terms, attitudes, and behaviors by such a person was seen by the CEP initially as being "accepting," or "empathetic" similar to past AIDS Attitude Scales (AASs; Froman et al., 1992; Froman & Owen, 2001; Shrum et al., 1989). However, the CEP unanimously agreed that the "top" echelon for more favorable attitude would be "affirming." Such an individual, the CEP reasoned, would be more than just "accepting;" they would recognize and honor the unique challenges faced by PLHIV, be actively engaged in work to help PLHIV, and be a true ally to those infected, affected, and at-risk of HIV.

5. Describe how a person with a mid-range of attitude towards PLHIV would think, feel, and behave
    - This identification and description became the most challenging for the CEP. After discussion, the mid-favorable level was seen as a range with more than one potential point. One point should be as close to exact middle as possible (which was later termed "impartial"); another being closer to the top of the favorable scale (termed as "compassionate"); and third being closer to the bottom (termed "indifferent"). This mid-level was revisited often during meetings of the CEP, with rationale, examples, and lively discussion of what differences were considered lying between "compassionate," "impartial" and "indifferent". As justification by the CEP was possible for each of these levels and how they are different, the final instrument reflected this three-tiered mid-level.
6. Write down three examples for each of the less, more, and mid-range levels of the attitude towards PLHIV span
    - The CEP expanded this step as they did not feel three examples for each were enough to capture the continuum of attitude towards people living with HIV/AIDS. This step was completed by the CEP with large, self-adhesive paper placed around the meeting room with examples written on them. Once the CEP felt the list was fully exhausted, the CEP deliberated on examples which were either identical to each other, or seen as getting at the same

element of attitude. For example, multiple statements centered around financial assistance for medical treatment, research, or other types of funding. These were eventually consolidated down to the statement "It is appropriate to spend money on HIV/AIDS. Another example would be multiple statements regarding concern of being infected being reduced to one statement, "I prefer to avoid PLHIV because I'm concerned I will get infected." Specific intent was used by the CEP for such statements to be boiled-down to the core of the meaning behind statements as they wanted to get at the main point while not requiring multiple statements to do so.

7. Use a line to represent the span and write the examples along the line; arrange them in locations which represent the levels of attitude
    - Once CEP viewed a set of statements as being a potential end scale, the statements were arranged according to the already established "less favorable" to "more favorable" continuum. As this continuum became more fully realized, with statements ranging in attitude, the remaining levels were identified by the CEP and named (i.e., "dismissive" and "alienating;" see photo in Appendix C).

3.4.3 Phase I: Instrument Creation

This process guided the CEP in a structured approach to instrument construction. In so doing, a linear structure of the attitude was made explicit and the generated statements were placed qualitatively along the continuum. The specific statements,

continuum of statements, and their relationship to the scale can be seen fully in Appendix C. Consider, by way of example, at the more favorable end there are things such as attitudes which are "affirming" and "accepting;" a mid-range where attitudes are "indifferent" or people are "compassionate;" and a less favorable end where people who are HIV-positive are seen as needing to be "punished" or have "violent" repercussions. Such terms are used by way of example and do not discount considering the historical factors which have been utilized in past AIDS Attitudes Scales (AASs) such as "avoidance" and "empathy" (Froman et al., 1992; Froman & Owen, 2001). However, following the process as outlined, the CEP was charged with identification of levels they felt were appropriate when considering a measurement of attitudes (e.g. affirming), the items and alignment within the levels (i.e. the statements), and the distribution between the levels. Because of this, past factors such as avoidance or empathy were not termed the same for the MHP-HAAS.

Because attitude towards PLHIV were hypothesized to span across a linear continuum, those answering the statements should have the opportunity to answer based on how strongly they agree or disagree with the question being posed. A Likert scale (Likert, 1932) is a well understood, ordinal rating scale used to aid in the operationalization of agreement level. Wolfe and Smith (2007) strongly encouraged a four-category option. They argued against the inclusion of a fifth, mid-range "neutral" option because participants are likely to choose neutrality for reasons other than construct under investigation, thus decreasing reliability and validity. The CEP was informed of the recommendation to use both a Likert scale and avoid adding a fifth "neutral" option. The lead researcher gave the CEP the power to determine for themselves how they

wished to set the answering options. A final, unanimous agreement was to establish the rating scale categories as "1 = Strongly disagree, 2 = Disagree, 3 Strongly Agree. The Likert rating scale is provided in Appendix C. The CEP understood that the results of the pilot study may suggest a different answering scheme. And, the CEP acknowledged that they were prepared to review and consider revising items if that became necessary.

The CEP's final, established statements for the variable of attitude towards PLHIV ranged from s favorable to more favorable attitudes. They were a set of 25 items which spanned the variable's levels. Affirming was the most favorable; impartial was the middle favorable attitude; and violent was the least favorable. The items, with their original hierarchy by level of favor, can be reviewed in Appendix C. The items were randomized for the final instrument, which can be seen in Appendix D. A set of standard demographic questions were added to the end of the attitude questions. The attitude, in combination with demographic questions, became the final proposed MHP-PLHIV-AS.

3.5 Phases II & III: Methods

3.5.1 Phases II & III: Participants

The study was conducted by those associated with The University of Toledo (UT), and consequently it was subjected to the appropriate UT Internal Review Board (IRB) for use of the instrument, adult informed consent, and study procedures. Because participant recruitment and data collection were facilitated by professional counselors, the research practices conformed to the American Counseling Association's *ACA Code of Ethics* (2014).

A sample of MHPs was sought so that it would be representative of the overall population. The population of interest includes professional counselors from all

specialties (clinical mental health, school, rehabilitation, addictions, marriage and family, etc.), licensed social workers (i.e., social workers who provide mental health supportive services), and clinically-related psychologists (e.g., clinical, counseling, school). Graduate-level students who are in training to become one such MHP also qualified to participate in the study. Such students are already providing mental health related services to clients through practicum and internship placements. For degreed practitioners, an additional inclusion criterion was licensure or certification. To be included in this study, prospective participants were screened to determine that they hold a discipline-specific state licensure or certification that affords them legal rights to diagnose and treat mental and emotional disorders in their area(s). Because of credentialing needed to be representative of the MHP population, all participants were 18 years or older.

The rationale for Phases II (pilot study) and III (validation study) target number of participants was determined through the use of standard approaches to sample size construction (Creative Research Systems, 2011; Hinkle, Wiersma, & Jurs, 2003). According to the U.S. Department of Labor, the last census data indicated there are approximately 552,000 individuals in the U.S. who are mental health professionals (Grohol, 2011), as defined by providing diagnosis and treatment of mental, substance, and behavioral disorders. This MHP population figure, along with accepted statistical standards of a 95% confidence level and a 95% confidence interval (Hinkle, Wiersma, & Jurs, 2003), was entered into an online sample calculator program to determine the sample desired for Phase III (Creative Research Systems, 2011). The calculation estimated an acceptable sample at 384 participants for the Phase III, validation study.

Because some participants may not have completed the MHP-PLHIV-AS, or otherwise provide unusable data (e.g., not complete demographic data which is the only confirmation of being a mental health professional), this estimate was rounded up to a minimum of 400 participants as the goal. Because IRB approval requires the establishment of a cut-off of participation, the ceiling number of participants was set at 500. The participant recruitment figure (n = 400-500) then became the basis for the Phase II pilot study desired number of participants. It is well accepted that for a pilot study of this kind (where seeking initial instrument calibration is the goal), 10-20% of the estimated future sample (i.e., Phase III, validation study) is an appropriate goal (Baker, 1998; Simon, 2011). Therefore, the researcher s sought to recruit 40-80 participants for the Phase II pilot study.

Phase II participants were recruited from master- and doctoral-level students of psychology, counseling, and social work. Recruitment was done with the assistance of graduate-level program class instructors who were asked to provide the participation activity to their students. Snowball sampling also occurred, such that qualifying graduate students were encouraged to share the opportunity to participate with other mental health graduate students. Forty-eight responded, yet five were not graduate students (as evidenced by their demographic information). The data for those five, non-graduate students were removed. This left a total of forty-three (n = 43) participants for the Phase II pilot study. Of those, 25 identified as counseling master-level students; 14 identified as counseling doctoral-level students; 3 identified as social work master-level students; and 1 identified as a psychology doctoral student. Additional relevant demographic data are represented in Table 3.1.

Table 3.1: *Phase II: Pilot Study – Summary of Demographic Characteristics (n = 43)*

Characteristic	*M*	*SD*
Age	30.02	10.85
Age Range 22-56		
	n	**%**
Sex		
Male	5	11.6
Female	36	83.7
No Answer	2	4.7
Race		
Native American/Native Alaskan	0	0
Asian	3	7.0
Black/African American	3	7.0
Pacific Islander	0	0
White/Caucasian	29	67.3
Native American/Native Alaskan & White/Caucasian	1	2.3
Black/African American & White/Caucasian	2	4.7
White/Caucasian & Other	1	2.3
Other	2	4.7
No Answer	2	4.7
Ethnicity		
Hispanic/Latino	2	4.7
Non-Hispanic/Non-Latino	39	90.6
No Answer	2	4.7

The pilot study descriptive statistics for the MHP-PLHIV-AS is provided in Table 3.2. The levels of the construct are displayed in the "Code" section of Table 3.2. Such codes are useful in better understanding to which level the statement belongs. The "affirming" level, for example, is abbreviated as "AFF"; "accepting" as "ACC"; and so forth.

Table 3.2: *Phase II: Pilot Study – MHP-PLHIV-AS Descriptive Statistics (n = 43)*

#	STATEMENT	CODE	1 (SD)	2 (D)	3 (A)	4 (SA)
1	PLHIV experience unique problems due to the stigma associated with HIV/AIDS.	AFF1			*n* = 11 % = 25.6	*n* = 32 % = 74.4
2	PLHIV are just like everyone else.	IND1	*n* = 1 % = 2.3	*n* = 8 % = 18.6	*n* = 18 % = 41.9	*n* = 16 % = 37.2
3	PLHIV should not have sex with other people.	PUN1	*n* = 11 % = 25.6	*n* = 23 % = 53.5	*n* = 7 % = 16.3	*n* = 2 % = 4.7
4	PLHIV are discriminated against.	EMP1			*n* = 16 % = 37.2	*n* = 27 % = 62.8
5	PLHIV should be isolated from the rest of society.	PUN3	*n* = 32 % = 74.4	*n* = 9 % = 20.9	*n* = 1 % = 2.3	*n* = 1 % = 2.3
6	PLHIV should not have children.	PUN2	*n* = 18 % = 41.9	*n* = 18 % = 41.9	*n* = 7 % = 16.3	
7	PLHIV should only receive mental health services from someone who is also HIV-positive.	DIS1	*n* = 31 % = 72.1	*n* = 12 % = 27.9		
8	If a woman living with HIV/AIDS becomes pregnant, she should be reported for child abuse.	PUN5	*n* = 29 % = 67.4	*n* = 14 % = 32.6		
9	It confuses me why anyone would put themselves at risk of HIV infection.	DIS2	*n* = 9 % = 20.9	*n* = 19 % = 44.2	*n* = 13 % = 30.2	*n* = 2 % = 4.7
10	It is appropriate that there are social justice and advocacy efforts for PLHIV.	ACC1			*n* = 13 % = 30.2	*n* = 30 % = 69.8
11	I prefer to avoid PLHIV because I'm concerned I will get infected.	ALI2	*n* = 25 % = 58.1	*n* = 14 % = 32.6	*n* = 4 % = 9.3	
12	I support all PLHIV equally, regardless of how they were infected.	ACC2		*n* = 4 % = 9.3	*n* = 16 % = 37.2	*n* = 23 % = 53.5

13	Providing mental health services to a client who is HIV-positive is pointless as HIV/AIDS is a death sentence anyway.	VIO2	*n* = 41 % = 95.3	*n* = 2 % = 4.7		
14	It does not matter one way or another if someone is a PLHIV.	IMP1	*n* = 1 % = 2.3	*n* = 16 % = 37.2	*n* = 19 % = 44.2	*n* = 7 % = 16.3
15	I should be allowed to choose if I provide mental health services to clients who are HIV-positive.	DIS3	*n* = 19 % = 44.2	*n* = 16 % = 37.2	*n* = 6 % = 14.0	*n* = 2 % = 4.7
16	Those who get infected with HIV brought it upon themselves.	PUN6	*n* = 28 % = 65.1	*n* = 12 % = 27.9	*n* = 3 % = 7.0	
17	If a PLHIV infects someone, they should be legally prosecuted.	PUN4	*n* = 5 % = 11.6	*n* = 26 % = 60.5	*n* = 12 % = 27.9	
18	Regardless of the mental health services I provide them, clients who are HIV-positive will still infect others.	DIS5	*n* = 19 % = 44.2	*n* = 24 % = 55.8		
19	Those who get infected with HIV are immoral.	PUN7	*n* = 34 % = 79.1	*n* = 8 % = 18.6	*n* = 1 % = 2.3	
20	All humans, including PLHIV, deserve love, respect, and happiness.	AFF2			*n* = 7 % = 16.3	*n* = 36 % = 83.7
21	Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is pointless.	ALI1	*n* = 30 % = 69.8	*n* = 13 % = 30.2		
22	Sexual advances by a PLHIV would make me uncomfortable.	DIS4	*n* = 6 % = 14.0	*n* = 7 % = 16.3	*n* = 24 % = 55.8	*n* = 6 % = 14.0
23	I would be concerned of getting infected with HIV if I had a client who was HIV-positive.	ALI3	*n* = 23 % = 53.5	*n* = 19 % = 44.2	*n* = 1 % = 2.3	

24	It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).	COM1	$n = 1$ % = 2.3		$n = 10$ % = 23.3	$n = 32$ % = 74.4
25	HIV/AIDS is a punishment from God.	VIO1	$n = 36$ % = 83.7	$n = 6$ % = 14.0	$n = 1$ % = 2.3	

The Phase III sampling occurred in three fashions. First, master- and doctoral-level mental health students were recruited through their instructors. Instructors sent a recruitment email to their classes to invite students to participate. The recruitment email was clear that participation was voluntary. Second, professional mental health organizations were asked for publically-available, non-private contact information (e.g. name and email addresses) for helping professionals who qualify for participation. For example, the Ohio Counselor, Social Worker, and Marriage and Family Therapist (OCSWMFT) Board was able to provide contact information for Ohio's licensed clinical counselors, licensed independent social workers, and marriage and family therapists. Finally, a snowball sampling was also encouraged by requesting those who were contacted for participation share with their similarly-licensed or certified colleagues, as well as mental health graduate-level students who qualify for participation.

Four-hundred and sixty-six individuals responded to the request of participation. However, 12 did not qualify for participation and were removed from the sample. Two were medical professionals (e.g., nurse and physician), and ten did not complete demographic information and therefore could not have their mental health professional status verified. The final sample's ($n = 454$) descriptive statistics (age, sex, race, & ethnicity) are located in Table 3.3. The participants'' state of origin are displayed in Table 3.4. The participants' primary credential identification is indicated in Table 3.5.

Note that different states have different types of credentialing, or have tiered credentialing for certain licenses, such as those for professional counselors. Therefore, all types of licenses and certifications were offered as answering options for participants, and why some credentials appear to be duplication when they are, in fact, difference licenses (see Table 3.4 Licensed Professional Counselor types). Furthermore, the participants reported having anywhere from one to four different types of credentials or student status. In addition to their primary credential, 153 had a second credential; 31 had a third credential; and 7 had a fourth credential. Finally, the MHP-PLHIV-AS descriptive statistics are provided in Table 3.6.

Table 3.3: *Phase III: Validation Study – Summary of Demographic Characteristics (n = 454)*

Characteristic	***M***	***SD***
Age	43.68	14.16
Age Range 22-77		
	n	**%**
Sex		
Male	99	21.8
Female	354	78.0
Gender Non-Binary	1	.2
Race		
Native American/Native Alaskan	4	.9
Asian	3	.7
Black/African American	34	7.5
Pacific Islander	1	.2
White/Caucasian	397	87.4
Native American/Native Alaskan & White/Caucasian	4	.9
Native American/Native Alaskan & Black/African American	1	.2
Asian & & White/Caucasian	1	.2
Black/African American & White/Caucasian	2	.5
Pacific Islander & White/Caucasian	1	.2
Other	6	1.3
Ethnicity		
Hispanic/Latino	19	4.2
Non-Hispanic/Non-Latino	435	95.8

Table 3.4: *Phase III: Validation Study – Summary of State Location (n = 454)*

State	*n*	%
AL	1	.2
AZ	2	.4
CA	2	.4
CO	3	.7
FL	10	2.2
GA	6	1.3
IL	6	1.3
IN	6	1.3
KY	3	.7
MA	1	.2
MI	24	5.3
NJ	3	.7
NC	6	1.3
OH	351	77.4
PA	3	.7
TN	1	.2
TX	13	2.9
VA	6	1.3
WV	3	.7
WI	2	.4
No Answer	2	.4

Table 3.5: *Phase III: Validation Study – Summary Credentials (n = 454)*

Credential	*n*	%
Counseling Masters Student	19	**4.2**
Counseling Doctoral Student	23	**5.1**
Counseling in Training (RCT or CT)	2	**.4**
Licensed Professional Counselor (LPC/PC)	99	**21.8**
Licensed Professional Counselor – Provisional (LPC/PC PROV)	4	**.9**
Licensed Professional Counselor – Clinical Resident (LCP/CR-CR)	24	**5.3**
Licensed Professional Clinical Counselor (LPCC/PCC)	61	**13.4**
Licensed Professional Clinical Counselor – Supervisor (LPCC-S/PCC-S)	105	**23.1**
Marriage and Family Therapist (MFT)	7	**1.5**
Marriage and Family Therapist – Temporary (MFT Temp)	1	**.2**
Marriage and Family Therapist – Independent (IMFT)	7	**1.5**
Licensed School Counselor (LSC)	34	**7.5**
Rehabilitation Counselor (RC)	3	**.7**
Chemical Dependency Counselor Assistant (CDCA)	6	**1.3**
Licensed Chemical Dependency Counselor III (LCDC-III)	4	**.9**
Licensed Chemical Dependency Counselor – Independent,	2	**.4**

Clinical Supervisor (LICDC-CS)		
National Certified Counselor (NCC)	3	**.7**
Counseling – Other	6	**1.3**
Social Work Masters Student	5	**1.1**
Licensed Social Worker (LSW)	12	**2.6**
Licensed Social Worker – Clinical (LCSW)	6	**1.3**
Licensed Social Worker – Master (LMSW)	7	**1.5**
Licensed Social Worker – Independent (LISW)	3	**.7**
Licensed Social Worker – Independent, Supervisor (LISW-S)	2	**.4**
Social Worker – Other	1	**.2**
Psychology Masters Student	1	**.2**
Psychology Doctoral Student	2	**.4**
Licensed Psychologist	2	**.4**
Other Mental Health Professional	3	**.7**

Table 3.6: *Phase III: Validation Study – MHP-PLHIV-AS Descriptive Statistics (n = 454)*

#	STATEMENT	CODE	1 (SD)	2 (D)	3 (A)	4 (SA)
1	PLHIV experience unique problems due to the stigma associated with HIV/AIDS.	AFF1	*n* = 6 % = 1.3	*n* = 3 % = .7	*n* = 212 % = 46.7	*n* = 233 % = 51.3
2	PLHIV are just like everyone else.	IND1	*n* = 17 % = 3.7	*n* = 85 % = 18.7	*n* = 218 % = 48.0	*n* = 134 % = 29.5
3	PLHIV should not have sex with other people.	PUN1	*n* = 79 % = 17.4	*n* = 285 % = 62.8	*n* = 77 % = 17.0	*n* = 13 % = 2.9
4	PLHIV are discriminated against.	EMP1	*n* = 1 % = .2	*n* = 19 % = 4.2	*n* = 262 % = 57.7	*n* = 172 % = 37.9
5	PLHIV should be isolated from the rest of society.	PUN3	*n* = 380 % = 83.7	*n* = 67 % = 14.8	*n* = 4 % = .9	*n* = 3 % = .7
6	PLHIV should not have children.	PUN2	*n* = 167 % = 36.8	*n* = 218 % = 48.0	*n* = 65 % = 14.3	*n* = 4 % = .9
7	PLHIV should only receive mental health services from someone who is also HIV-positive.	DIS1	*n* = 316 % = 69.6	*n* = 135 % = 29.7	*n* = 2 % = .4	*n* = 1 % = .2
8	If a woman living with HIV/AIDS becomes pregnant, she should be	PUN5	*n* = 274 % = 60.4	*n* = 171 % = 37.7	*n* = 7 % = 1.5	*n* = 2 % = .4

	reported for child abuse.					
9	It confuses me why anyone would put themselves at risk of HIV infection.	DIS2	*n* = 102 % = 22.5	*n* = 233 % = 51.3	*n* = 104 % = 22.9	*n* = 15 % = 3.3
10	It is appropriate that there are social justice and advocacy efforts for PLHIV.	ACC1	*n* = 7 % = 1.5	*n* = 6 % = 1.3	*n* = 156 % = 34.4	*n* = 285 % = 62.8
11	I prefer to avoid PLHIV because I'm concerned I will get infected.	ALI2	*n* = 286 % = 63.0	*n* = 147 % = 32.4	*n* = 16 % = 3.5	*n* = 5 % = 1.1
12	I support all PLHIV equally, regardless of how they were infected.	ACC2	*n* = 2 % = .4	*n* = 13 % = 2.9	*n* = 182 % = 40.1	*n* = 257 % = 56.6
13	Providing mental health services to a client who is HIV-positive is pointless as HIV/AIDS is a death sentence anyway.	VIO2	*n* = 422 % = 93.0	*n* = 31 % = 6.8		*n* = 1 % = .2
14	It does not matter one way or another if someone is a PLHIV.	IMP1	*n* = 37 % = 8.1	*n* = 180 % = 39.6	*n* = 152 % = 33.5	*n* = 85 % = 18.7
15	I should be allowed to choose if I provide mental health services to clients who are HIV-positive.	DIS3	*n* = 139 % = 30.6	*n* = 149 % = 32.8	*n* = 141 % = 31.1	*n* = 25 % = 5.5
16	Those who get infected with HIV brought it upon themselves.	PUN6	*n* = 276 % = 60.8	*n* = 169 % = 37.2	*n* = 9 % = 2.0	
17	If a PLHIV infects someone, they should be legally prosecuted.	PUN4	*n* = 55 % = 12.1	*n* = 265 % = 58.4	*n* = 125 % = 27.5	*n* = 9 % = 2.0
18	Regardless of the mental health services I provide them, clients who are HIV-positive will still infect others.	DIS5	*n* = 215 % = 47.4	*n* = 226 % = 49.8	*n* = 11 % = 2.4	*n* = 2 % = .4
19	Those who get infected with HIV are immoral.	PUN7	*n* = 355 % = 78.2	*n* = 97 % = 21.4	*n* = 2 % = .4	
20	All humans, including PLHIV, deserve love, respect, and happiness.	AFF2			*n* = 43 % = 9.5	*n* = 411 % = 90.5

21	Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is pointless.	ALI1	*n* = 288 % = 63.4	*n* = 162 % = 35.7	*n* = 4 % = .9	
22	Sexual advances by a PLHIV would make me uncomfortable.	DIS4	*n* = 34 % = 7.5	*n* = 116 % = 25.6	*n* = 235 % = 51.8	*n* = 69 % = 15.2
23	I would be concerned of getting infected with HIV if I had a client who was HIV-positive.	ALI3	*n* = 284 % = 62.6	*n* = 151 % = 33.3	*n* = 16 % = 3.5	*n* = 3 % = .7
24	It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).	COM1	*n* = 4 % = .9	*n* = 3 % = .7	*n* = 100 % = 22.0	*n* = 347 % = 76.4
25	HIV/AIDS is a punishment from God.	VIO1	*n* = 410 % = 90.3	*n* = 39 % = 8.6	*n* = 3 % = .7	*n* = 2 % = .4

3.5.2 Phases II & III: Instrument

Participants were recruited through email because completion of the MHP-PLHIV-AS was done via the Internet. Collecting research data through online means can yield meaningful of results in the same manner as pen/paper methods (Granello & Wheaton, 2004; Laux, Young, McLaughlin, & Perera-Diltz, 2006). In fact, the United Nations (2012), has insisted the Internet is such a pivotal component in the global population's daily life, that in order to make data meaningful and to assist in clearer statistical understanding, online measures should be incorporated into research collection and dissemination. In recent years, studies in which traditional pen/paper data collection methods were compared to those of online measures have surfaced (Lefever, Dal, & Matthíasdóttir, 2007; UN, 2012; Schillewaert & Meulemeester, 2005; Ward, Clark,

Zabriske, & Morris, 2012). Such studies have noted benefits and drawbacks to both methods.

There are key benefits which drove the decision to utilize online data collection methods for this study. It was hoped participants would feel less pressure to provide socially desirable answers because their anonymity was assured. The instrument's items asked respondents to identify their attitudes towards PLHIV, which can be a sensitive subject for some individuals. Instead of being provided a pen/paper survey through which some respondents may have felt the investigator would know how they answered, participants should have felt freer to be more honest with their responses via online completion as their anonymity was assured. Online administration also provided the ability to reach a large audience of MHPs, hopefully diversifying the sample recruited (Van Selm & Jankowski, 2006). Another benefit of the online method for the MHP-HAAS was that studies have shown those who have had higher education, which describes all those recruited for this study, are more likely to participate if asked to complete an online research tool (Franceschini, 2000; Granello & Wheaton, 2004).

Further, there are efficiencies to online facilitation over pen/paper administration. Cost savings were realized through the ability to distribute and collect responses online. The only cost was the minimal charge paid to the online survey webhosting service (SurveyMonkey). Participants bore none of the costs. Conducting this research online also ensured a time savings in collecting the data. By disseminating the survey via an online link to the study, the sample of participants was recruited more easily and completed the survey more quickly than would have been the case using paper and pencil data collection methods. Additionally, time was saved in the ability to download the data

for analysis directly into the statistical calculation software, instead of having to manually input it. Data security and storage were additional benefits of using online methods. Instead of requiring a physical, locked storage space, the data were safely stored in a password-protected computer file.

Limitations to online data collection have also been indicated in the professional literature. One such caution is the acquisition of an appropriately diverse sample (Granello & Wheaton, 2004). Challenges such as a lack of computer ownership and/or skill may prohibit individuals from completing online surveys. The project, however, sampled from mental health students and clinicians. It was assumed the participants in this sample, given their career-specific responsibilities, have access to, and knowledge of, computer and Internet use. Prospective participants were emailed the invitation to participate which in-and-of itself suggests they have rudimentary computer skills if they have an email address and are capable of opening the invitation. Another drawback to online surveys for research purposes has come in the form of measurement error due to possible inaccurate answering by the participants. It has been suggested that participants' confusion and entry errors can be avoided through the use of clear and concise language (Granello & Wheaton, 2004; Lefever et al., 2007). The MHP-PLHIV-AS was designed specifically to adhere to this suggestion. Statements easily fit on 1-2 lines, were clearly legible on the screen, and the answer options were clearly identified adjacent to easy of the statements and questions. It was expected that this assisted with eliminating any answer-choice confusion by the participants, therefore lowering the opportunity for measurement error. A review of the full MHP-HAAS can be done by referring to Appendix F.

3.5.3 Phases II & III: Procedures

Steps for recruitment into Phases II and III, completion of the MHP-PLHIV-AS, and data storage followed standard, approved IRB procedures. First, recruitment for participants was done by sending an email containing an opening request for participation, information about the importance of the study, instructions for completion, and a link to the online MHP-PLHIV-AS. The sample email is provided in Appendix D. Upon opening the link, participants were required to first read/agree to the informed consent, as demonstrated in Appendix E. After completion of the MHP-PLHIV-AS (Appendix F), the data were stored with the online system until the time for participation closed. At that point, the entire data set was downloaded by the by the researcher and prepared for analyses. All data have been stored in password-protected files at each step of the process.

Phase II included the initial testing of the questions and response options with a sample of MHPs. This was done in keeping with the Wolfe and Smith (2007) recommendation to evaluate individual items of a newly developed instrument. Furthermore, when analyzing pilot data using the RMM, the wording of the items was examined by looking at the fit of items and participants' level of ease or difficulty with the response options. A review of the data for the pilot testing during Phase II looked for how well the items are worded (for participants to answer) and if the items have an appropriate level of unidimensionality (measuring the attitude construct of interest). Although it had been planned that any items not measuring attitudes towards HIV/AIDS would be removed, analyses of the pilot study demonstrated no need for such edits before

moving the study into Phase III. These results are and consequent decisions are detailed in Chapter 4.

3.6 Data Analysis

As noted in Chapter Two, attitudes are psychological constructs that can be measured (Eagly & Chaiken, 1993, 2007; Gawronski, 2007; Thurstone, 1927a, 1927b, 1928). Attitudes play a crucial role in social interactions (Gawronski, 2007). Attitude is a cognitive process which denotes evaluation of a target, is interconnected with knowledge and behavior (Rose, Osborne, Hairston, Laux, & Pawelczak, 2015), as well as affect (Eagly & Chaiken, 1998; Hogg & Vaughan, 2013; van den Berg, Manstead, van der Pligt, & Wigboldus, 2006). Moreover, attitudes may be quantifiable if it can be demonstrated empirically that they can be represented by responses on a linear continuum of less favorable to more favorable. Appropriate measurement analyses are required in order to understand the extent to which the data fit a linear quantitative structure.

Linear quantitative analyses in social sciences are commonly conducted through the lens of classical test theory (CTT) where scores of an instrument are summed to produce a raw score. Other statistical computations of CTT data include examining the differences in means between different participants or participant groups, and correlations between sets of variables. There are fundamental problems with such approaches when analyzing latent psychological traits, such as attitude. For one, such calculations do not attach meaning to the respondent scores. As an example, consider an individual scoring a "3.2" on an anxiety scale. From that raw score alone, what does that individual mean or feel when they say that they are anxious at a level of 3.2? An investigator cannot know the answer simply from summing a set individual responses. Another reason that

analyzing psychological traits using a CTT model is flawed is that such analyses take nominal or ordinal data and treat them as if they were an interval scale, and assumes each interval is weighted equally (Kindlon, Wright, Raudenbush, & Earls; Andrich, 1978). CTT then, sums raw counts, ranks, or ratings, but does not actually *measure* the construct under investigation. Because the present research involves the construction of an instrument to measure attitude towards PLHIV, a different measurement analysis was required.

After the MHP-PLHIV-AS data were collected, they was analyzed through a Rasch Measurement Model (RMM; Rasch, 1960, 1980). The RMM has been used in other HIV/AIDS related research, such as investigations on lowering the risk of HIV transmission (Fendrich, Smith, Pollack, & Mackesy-Amiti, 2009; Li, Liu, Liu, Feng, & Cai, 2011; Mattson et al., 2010). Others have used Rasch analyses to better address issues for people living with PLHIV, such as severity of fatigue (Lerdal et al., 2011) and overall quality of life (Chang, Wang, Tang, Cheng, & Lin, 2014; Leplège et al., 1997). To date, however, the RMM has not been used to construct an instrument that measures attitude towards PLHIV.

Unlike CTT, the RMM is grounded in item response theory (IRT). IRT is a field of study which models an individual's ability on a particular tool as interconnected with the items on that instrument (Baker & Kim, 2004). One of the core aspects of the RMM is that it specifically models this relationship between a person's ability, the difficulty of the item being answered, and the statistical probability between such ability and item difficulty (Bond & Fox, 2015). Rasch developed this model of analysis in keeping with the foundational principles of measurement (Rasch 1960, 1980), which were pioneered

by Thurstone (1927a, 1927b, 1928) and have become the cornerstones of measuring psychological constructs (e.g., attitudes) (Andrich, 1978, Bond & Fox, 2015). These principles are:

- **Unidimensionality** – measurement inherently is limited to measuring only one construct at a time
- **Linearity** – conceptualized as a yard stick where with easier items to answer or endorse on the one end and hard items to answer on the other end
- **Equal-Interval** – the items on the yard stick are at equal increments, i.e., the unit does not change size across the range of the scale
- **Invariance** – regardless of the sample, the item difficulties remain the same, within standard error estimates. Regardless of the items, the person measures remain the same, within standard error estimates

It is appropriate to consider these elements within the framework of the study being proposed. Unidimensionality refers to the level with which the MHP-PLHIV-AS is measuring one construct, namely the attitude towards PLHIV, and no other construct. Linearity was incorporated by explicitly identifying how positive, favorable attitudes towards PLHIV are at one end of the scale's "yard stick;" negative, less favorable attitudes at the other end, and a successive continuum of attitudes in between connecting the two extremes. Responses by a participant indicate a less favorable attitude of PLHIV at one end of the spectrum, and a more favorable attitude at the other end. Equal-interval levels were sought to be constructed from the responses such that the resultant MHP-PLHIV-AS levels are at equal intervals along the "yard stick" of linearity. Finally,

invariance means that, regardless of the sample being investigated, the item difficulties on the MHP-PLHIV-AS only vary within standard error estimates. One of the significant benefits of utilizing RMM is that the analysis provides evidence to support the extent to which one can infer reliability and validity about the quantifiable structure of the attitude variable. As such, it gives a strong foundation to the instrument and its use and interpretation.

The RMM is a widely-used model that provides a set of diagnostic tools for constructing a sound, stable psychological instrument. The RMM assists in supporting validity judgments and multiple types of reliability (Kline, 2000; Schumaker & Smith, 2007; Smith, 2001; Wolfe & Smith, 2007), and can be invaluable in the construction of instruments which measure a specific psychological concept such as attitude (Bond & Fox, 2015; Fox & Jones, 1998; Kubinger, 2005; Yates, 2011). The RMM provides a set of diagnostics to assess the performance of the measure: it provides a factor analysis of the residuals, once the primary measure has been extracted; it transforms Likert scale, ordinal data into interval data; it estimates a participant's level of the attitude construct; and an item's level of difficulty (Bond & Fox, 2015; Fox & Jones, 1998). As such, the RMM enhances the validity argument for measure construction and has been applied in a variety of psychological studies, measuring constructs such as satisfaction (Battisti, Nicolini, & Salini, 2010; Gallo, 2011; Hawthorne, Sansoni, Hayes, Marosszeky, Sansoni, 2014), self-esteem (Gray-Little & Hafdahl, 2000; Kim & Omizo, 2005; Kyriakides, Kaloyirou, & Lindsay, 2006), anxiety and depression (Oliveira, Fernandes, & Sisto, 2014; Shea, Tennant, & Pallant, 2009), and attitudes (Anselmi, Vianello, & Robusto, 2013; Trejada, Luque, Rojas, & Moreno, 2011; Yates, 2011).

Chapter Four

Results

4.1 Overview

This study's purpose was to develop and validate a Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS) and to measure mental health professionals (MHPs) attitudes towards people living with HIV and/or AIDS (PLHIV). This study's research questions were formulated based on the measurement diagnostic and analysis (Rasch Measurement Model; Rasch, 1960, 1980) approach. The following research questions were posed to construct a measure of attitudes towards HIV/AIDS:

1. To what extent do the participants use the MHP-PLHIV-AS rating scale categories as intended?
2. How well do the items separate participants into statistically distinct and meaningful levels?
3. To what extent do the items form a reliable (stable) line of inquiry (ruler)?
4. To what extent is the MHP-PLHIV-AS measuring a unidimensional construct (attitude towards PLHIV)?
5. Is the item ordering of the MHP-PLHIV-AS meaningful?

Over the course of five meetings, a Content Evaluation Panel (CEP) of HIV/AIDS experts constructed the initial MHP-HAAS. The final scale ranged from less favorable to more favorable attitude towards PLHIV along a continuum with levels ranging in the following, descending order:

- Affirming (AFF)
- Accepting (ACC)
- Empathetic (EMP)
- Impartial (IMP)
- Indifference (IND)
- Dismissive (DIS)
- Alienating (ALI)
- Punishing (PUN)
- Violent (VIO)

Identified statements associated were then grouped according to their expected level, and phrased in a manner to account for the CEP's identified Likert scale rating category options of "1=Strongly Disagree", "2=Disagree", "3=Agree", and "4=Strongly Agree." A review of the levels, continuum of attitudes, and items associated with each is provided in Appendix C.

The MHP-PLHIV-AS (Appendix F) was piloted through an online survey with a sample of the MHP population. Diagnostics and analyses of the pilot study data were conducted through a combination of descriptive statistics through the use of the Statistical Package for the Social Sciences (SPSS) software (International Business Machines [IBM] Corporation, 2013) and WINSTEPS Rasch Measurement Software (Linacre, 2016).

After evaluating the pilot data and determining the MHP-PLHIV-AS was sufficient in measuring the attitude towards PLHIV variable within appropriate parameters, the second, Phase II validation study was conducted with an online survey with a larger sample of the MHP population. Diagnostics and analyses were again reviewed through a combination of SPSS software (for descriptive statistics) and WINSTEPS (for RMM diagnostics).

The data from the validation study provided results which required four successive, logical steps of diagnostic review in order to determine two primary hypotheses of how and to what extent the MHP-PLHIV-AS was measuring the variable of attitude towards PLHIV. These two hypotheses were then tested with two additional steps of measurement diagnostics to determine the most appropriate decisions about the instrument, through a RMM with the use of the WINSTEPS software. Final decisions were then made on how and to what extent the MHP-PLHIV-AS is measuring the attitude towards PLHIV construct. Each progressive step of the data analyses will be explained. Also, the authors will offer two compelling and competing hypotheses. First, however, results of the pilot data will be provided.

4.2 Phase II: Pilot Study Results

4.2.1 Phase II: Pilot Study Sample

The pilot study was conducted through the use of an online survey which included an adult informed consent (see Appendix E) and the MHP-PLHIV-AS (including demographic questions; see Appendix F). An invitation to participate in the pilot study was extended to master- and doctoral-level students in mental health programs such as counseling, psychology, and social work (see Appendix D). This invitation was sent to

such students to two ways. First, university professors directly emailed students in their courses and asked them to participate in the study. The professors' emails included a link to the online survey host. Second, snowball sampling was employed such that each enrolled student was encouraged to share the survey link with other students. In total, the pilot study contained forty-three participants (n = 43) who met the criteria for inclusion. The pilot study's demographic characteristics are provided in Chapter 3's Table 3.1.

4.2.2 Phase II: Pilot Study Data Analyses

The pilot study data diagnostics were analyzed to investigate the MHP-PLHIV-AS items' relationship to the overall scale, and to capture the extent to which the scale was measuring only the one construct (unidimensionality) of attitude towards PLHIV. To do this, three Rasch Measurement Model (RMM) diagnostics were conducted. The first diagnostic explored the extent to which items corresponded to the overall scale. This was accomplished by considering the point-biserial item correlations. In RMM, the "point-biserial correlation is the Pearson correlation between responses to a particular item and scores on the total test" (Kelley, Ebel, & Linacre, 2002, p. 883). Akin to what is seen when considering a Pearson correlation, the range for a point-biserial correlation is between -1 to +1 (Kelley et al., 2002). A positive point-biserial correlation of 0 or higher suggests the item fits with the overall scale (Kelley et al., 2002).

A Rasch factor analysis was conducted to assess whether the MHP-PLHIV-AS had an appropriate level of unidimensionality. The criteria for unidimensionality specify that one consider the raw variance explained by the measure (i.e., dimensionality percent), and the first contrasting unexplained variance (Bond and Fox, 2015; Linacre, 2005). Additionally, eigenvalues were also considered because the eigenvalues represent

the strength associated with the number of items on a given instrument (Linacre, 1998, 2005; Linacre & Tennant, 2009). For a rating-scaled instrument such as the MHP-PLHIV-AS, 50-60% of the variance is an accepted amount of variance (Fisher, 2007; Linacre, 2011). The first unexplained contrasting variance should be under ≤10% (Fisher, 2007; Linacre, 2005, 2006, 2011). Finally, eigenvalues for the first contrasting unexplained variance should be <2.0 so that the dimension is not bigger than by chance alone (i.e., two items or less does not discount dimensionality, but more than two items could suggest a separate dimension to the construct; Linacre, 2005, 2016).

Following these standards, the percent of variance, percent of first contrasting unexplained variance, and eigenvalue were set as the three elements of dimensionality criteria. The variance percent for the MHP-HAAS was set at ≥50%, meaning it could be said that at least half of the variance was known to be relative to the construct under study. The first contrasting variance was set at ≤10%, meaning the first unknown variance construct should ≤10%. Finally, the eigenvalue for the first unknown contrast was set at <2.0, so that no more than the equivalent amount of two questions accounted for variance.

In addition to these benchmarks, an item map was also produced to visually compare persons, items, and the mean and standard deviations of both (Linacre, 2016). As will be seen in future figures (e.g., Figure 4-2), the variable map displays the variable in the middle as a linear continuum. The items are indicated on the right-side column, in a distribution ranging from easiest (top) to most difficult (bottom) to answer. The left-side column displays the distribution of the sample's ability measure along the variable (Linacre, 2016). In their respective columns, both the items and persons have the mean

designated by "M" and standard deviation designated by "SD." It was expected that the items would range along the variable where more favorable would be easier to endorse than the less favorable items. In this fashion, the variable map would show affirming-related items at the top, and less favorable items at the bottom. Given the sample was MHPs and therefore likely to have more favorable attitudes towards PLHIV, it was assumed their answers would fall largely in the mid- and more favorable levels. It was assumed, for example, that item AFF2, which states "all humans, including PLHIV, deserve love, respect, and happiness" would be easy for the sample to endorse. The use of the variable map was intended to assist in understanding more detail on how the items aligned to the variable, how the sample could be described in their level of the variable, and the targeting between the sample and the items.

Finally, a rating scale category probability graph was also considered to understand how participants responded to items on the instrument. This assists in determining if the answer choices are appropriate and being used as intended. The MHP-PLHIV-AS answers options had been set with a Likert scale where "1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree." A rating scale such as this is modeled as having three thresholds. "Each item threshold (*k*) has its own difficulty estimate (F), and this estimate is modeled as the threshold at which a person has a 50/50 chance of choosing one category over another" (Bond & Fox, 2015, p. 281). Therefore, there are three thresholds to the MHP-HAAS's rating scale: F1 = between rating category 1 and 2; F2 = between rating category 2 and 3; and F3 = between rating category 3 and 4. Rating scale models are graphs of the intersecting probabilistic curves for each answer category. The curves are depicted by utilizing the numbers which represent their

category within the rating scale. The difference between person ability estimates and item difficulty are aligned on the x-axis and the y-axis is the response probability of a category based on the person ability estimate.

With the probability curves displayed in a graph, it can be visually inspected not only for the threshold cut-offs, but also for how each of rating scale categories are used. If a rating scale category is not being used a lot by the respondents, then it should be considered for removal (Linacre, 2002). A guideline for the MHP-PLHIV-AS rating scales was set at the .5 (50%) probability level as a guide in determining if any rating scale category was not being used. Therefore, if any rating scale category did not have a probabilistic curve peak higher than the .5 level, it was to be removed and the rating scale for the instrument realigned.

The results of the pilot study's point-biserial correlations, level of dimensionality, and variable map are depicted in Table 4.1, Figure 4-1, and Figure 4-2 respectively. The rating scale probability graph is displayed in Figure 4-3.

Table 4.1: *Phase II: Pilot Study – Point-Biserial Correlations*

Item #	Item Code	Best Desired Answer	Pt. Biserial Correlation
1	**AFF1**	**SA**	**-0.07**
2	**IND1**	**SA**	**-0.09**
3	PUN1	SD	0.59
4	**EMP1**	**SA**	**-0.27**
5	PUN3	SD	0.49
6	PUN2	SD	0.66
7	DIS1	SD	0.43
8	PUN5	SD	0.53
9	DIS2	SD	0.45
10	**ACC1**	**SA**	**-0.40**
11	ALI2	SD	0.63
12	**ACC2**	**SA**	**-0.60**

13	VIO2	SD	0.40
14	IMP1	SA	0.02
15	DIS3	SD	0.53
16	PUN6	SD	0.58
17	PUN4	SD	0.34
18	DIS5	SD	0.51
19	PUN7	SD	0.57
20	**AFF2**	**SA**	**-0.36**
21	ALI1	SD	0.49
22	DIS4	SD	0.58
23	ALI3	SD	0.69
24	**COM1**	**SA**	**-0.32**
25	VIO1	SD	0.46

*Items in bold represent those with negative point-biserial correlations

Figure 4-1: *Phase II: Pilot Study – Dimensionality Map*

Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = PERSON information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	172.3461	100.0%		100.0%
Raw variance explained by measures =	129.3461	75.1%		74.4%
Raw variance explained by persons =	10.1818	5.9%		5.9%
Raw Variance explained by items =	119.1643	69.1%		68.5%
Raw unexplained variance (total) =	43.0000	24.9%	100.0%	25.6%
Unexplained variance in 1st contrast =	12.9217	7.5%	30.1%	
Unexplained variance in 2nd contrast =	4.0424	2.3%	9.4%	
Unexplained variance in 3rd contrast =	3.3573	1.9%	7.8%	
Unexplained variance in 4th contrast =	3.0194	1.8%	7.0%	
Unexplained variance in 5th contrast =	2.6609	1.5%	6.2%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-2: *Phase II: Pilot Study – Variable Map*

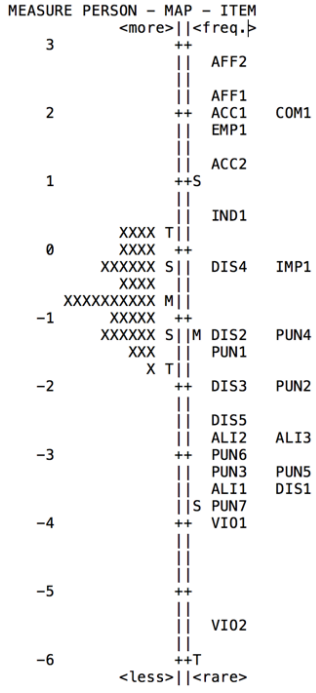
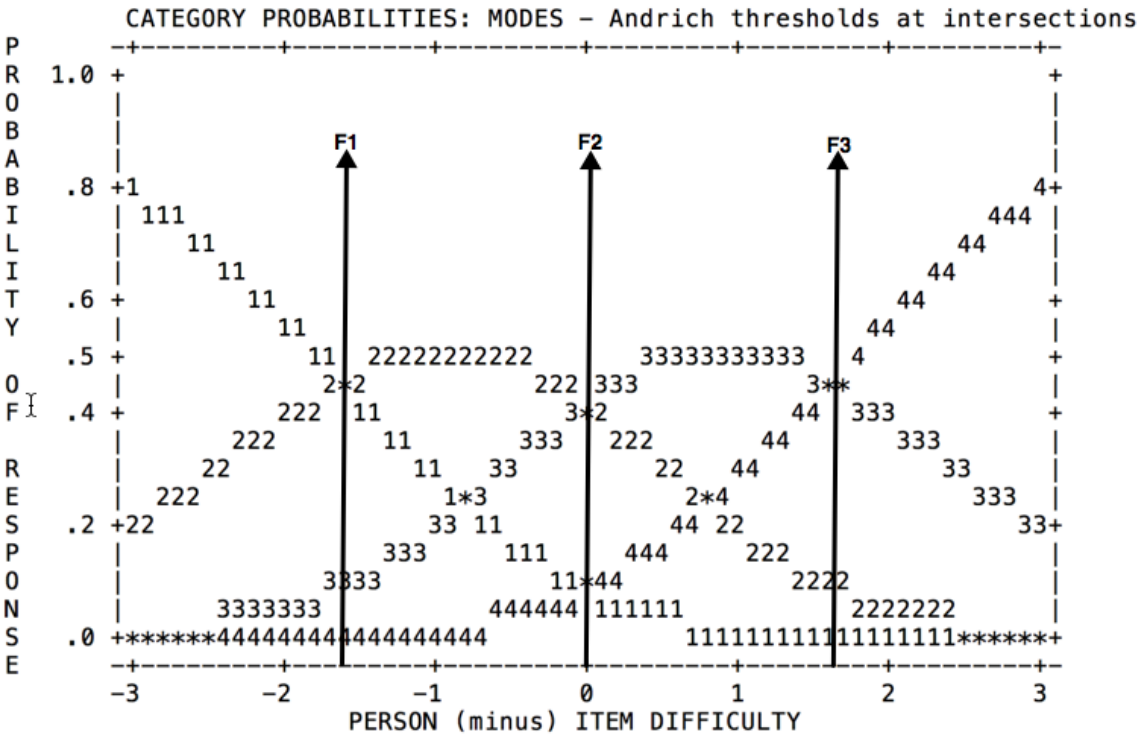


Figure 4-3: *Phase II: Pilot Study – Rating Scale Probabilities*



4.2.3 Phase II: Pilot Study Data Results

First, as displayed in Figure 4-3, the answer-option rating scale ("1 = Strongly Disagree" to "4 – Strongly Agree") indicated the rating scale categories were being used as expected. Each rating scale category was at or above the .5 (50%) probability of response level, and the category thresholds were relatively evenly spaced. This means the rating scale categories were functioning well as a 4-option category. Second, as indicated in Table 4.1, there were seven items (items 1, 2, 4, 10, 12, 20, & 24) which had negative point-biserial correlations. These findings suggested these items were not measuring the construct of attitude towards PLHIV in the same way as did the other items. The dimensionality (Figure 4-1) and variable maps (Figure 4-2), however, suggested evidence that the researchers should not just automatically discard or alter the seven negative point-biserial correlated items. The unidimensionality observed was at

75.10%, with the first contrasting dimension at 7.50%. This observed unidimensiality is well within he previously noted parameters of construct dimensionality. The variable map shows affirming items (AFF1 & AFF2) at the top, easy end of the scale, and violent items (VIO1 & VIO2) at the bottom, or difficult end of the scale. These findings were assumed and consistent with the Content Evaluation Panel's (CEP) construct theory. Further, as displayed in Figure 4-2, the sample's mean is almost exactly one standard deviation higher than the mean of item difficulty. This finding is also in line with expectations that the sample would find more favorable items easier to answer, thus scoring higher on the overall scale.

The dimensionality map's first unexplained contrast has an eigenvalue of 12.92. This is interpreted to mean that there is almost the equivalent of 13 items within the scale which are measuring the construct in a different way than the rest of the instrument. Some of this variance was accounted for by the seven items that had negative point-biserial correlations. A common thread among those items (items 1, 2, 4, 10, 12, 20, & 24) were that they all had "Strongly Agree" as the preferred answer, with a "4" as the corresponding highest score possible. By way of example, EMP1 (Item 4) states "PLHIV are discriminated against." Agreeing with this statement would be the assumed, preferred response by mental health professionals. Additionally, the items that had negative point-biserial correlations were those items fully contained within the more favorable level of the scale (affirming, accepting, and empathetic) and two of the three in the mid-level of the scale (compassionate and indifference). Because these were two distinct groups of factors, the results challenged the theoretical framework of a one dimension, linear approach to measuring the variable. Because the manner of answering may have affected

how these items were different than the rest of the instrument's items, the negative point-biserial correlated items (1, 2, 4, 10, 12, 20, & 24) were reverse coded such that "1 = Strongly Disagree" became "4 = Strongly Disagree", "4 = Strongly Agree" became "1 = Strongly Agree", and so on.

Reverse coding these seven items did not correct the problem. All items of the instrument became contrary to the original construct theory, and provided no statistical significance to the variable. The conclusion, under a RMM approach, was that the original results suggested two dimensions to the variable. This was indicated by the large level of variance (over 75%) when all items were considered together. Yet the point-biserial correlations suggested two dimensions where one included the seven items with negative point-biserial correlations, and another dimension included the positive point-biserial correlated items (18 items total). Given the small sample size (n = 43) did not provide enough power, there was not enough data in the pilot study to determine this with any level of statistical significance. More data was required to clarify this matter.

The pilot data diagnostics showed that the MHP-PLHIV-AS was measuring attitude towards PLHIV. This finding was consistent with the construct theory that such measurement was possible. However, the results also suggested that the instrument had two dimensions that were both associated with the variable. Under a RMM, negative point-biserial correlated items of a pilot study are not removed in cases when the data support the original construct theory, yet there is evidence of more dimensions to the construct as seen in the pilot study (Bond & Fox, 2015; Linacre, 2016). More data were needed to further explore and investigate validating the MHP-HAAS. It was decided to

proceed with the full study, with no edits made to the items of the MHP-HAAS, to gather such data.

4.3 Phase III: Validation Study Results

4.3.1 Phase III: Validation Study Sample

The validation study was conducted through the use of an online survey which included an adult informed consent (see Appendix E) and the MHP-PLHIV-AS (including demographic questions; see Appendix F). Sampling occurred through three methods. First, an invitation to participate in the study was extended to master- and doctoral-level students in mental health programs such as counseling, psychology, and social work (see Appendix D). University professors directly emailed students in their courses and asked them to participate in the study. The professors' emails included a link to the online survey host. Second, practitioners in the field were contacted through the use of email distribution lists by professional organizations and groups. The emails to practitioners was identical to those that were sent to students and included a link to the online survey host. Finally, snowball sampling was employed such that each individual contacted were encouraged to share the survey link with other students and practitioners in social work, counseling, and psychology. The validation study contained four-hundred and fifty-four individuals (n = 454) who met the criteria for inclusion. Validation study participants' demographic, location, and credential characteristics are displayed in Chapter 3's Tables 3.3, 3.4, and 3.5 respectively.

Diagnostics and analyses of the validation study data was completed through multiple, methodical steps. These steps resulted in two competing and compelling hypotheses for how the MHP-PLHIV-AS was measuring the attitude towards PLHIV

construct, and how the instrument should be utilized. A snapshot of these steps is provided in Figure 4-4.

Figure 4-4: *Phase III: Validation Study – Data Analyses Process*

Step One

- MHP-PLHIV-AS considered as one dimension.
- All items as they were originally coded.
- Results produced seven items with negative point-biserial correlations.

Step Two

- MHP-PLHIV-AS considered as one dimension.
- Seven items with negative point-biserial correlations (1, 2, 4, 10, 12, 20, & 24) reverse coded.
- Results produced lack of support of a single dimension of the attitude construct.

Step Three

- MHP-PLHIV-AS considered as two dimensions.
- First dimension (more favorable attitudes) included the seven items with negative point-biserial correlations (1, 2, 4, 10, 12, 20, & 24) as they were originally coded.
- Second dimension (less favorable attitudes) included all other items.
- Results suggested Item 14 (IMP1) was inappropriate for bottom dimension and should be moved to top dimension.

Step Four

- MHP-PLHIV-AS considered as two dimensions.
- First dimension (more favorable attitudes) included eight items (1, 2, 4, 10, 12, 14, 20, & 24).
- Second dimension (less favorable attitudes) included all other items.
- Results suggested second-dimension items needed reverse coded to match intended meaning of the items, and two final hypotheses:

Final Competing Hyptoheses:

- **H_1:** Attitude construct has one dimension
- **H_2:** Attitude construct has two dimensions.

4.3.2 Phase III: Validation Study Data Analyses – Step One

The same statistical benchmarks were set for the validation study as were set for the pilot study. First, items needed positive item-to-scale correlations, as evidenced by positive point-biserial correlations (Kelley et al., 2002). Next, evidence of dimensionality was set as a level of variance ≥50%, the first unexplained construct under

≤10% and the eigenvalue <2.0 (Linacre 2005, 2016). Variable maps were used in order to visually inspect the persons and items together, their respective means and standard deviations, and the implications of the instrument and sample (Bond & Fox, 2015; Linacre, 2016). Rating scale graph of probability curves was also reviewed to investigating rating scale category thresholds and response probability.

The Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS) was first explored in its expected form of all items together as one category of a single scale. This was examined through the use of point-biserial correlations, Rasch factor analysis, a variable map, and a rating scale probability graph. Results of each are represented in Table 4.2 and Figures 4-5, 4-6, and 4-7.

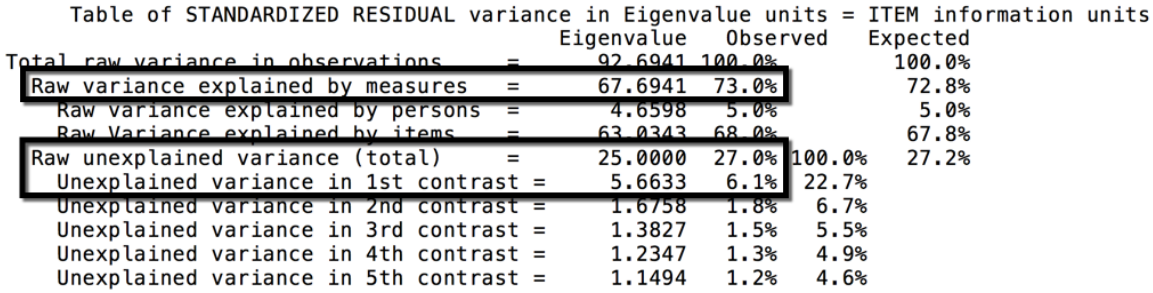
Table 4.2: *Phase III: Validation Study – Point-Biserial Correlations, Scale As-Is*

Item #	Item Code	Best Desired Answer	Pt. Biserial Correlation
1	**AFF1**	**SA**	**-0.01**
2	**IND1**	**SA**	**-0.01**
3	PUN1	SD	0.50
4	**EMP1**	**SA**	**-0.05**
5	PUN3	SD	0.39
6	PUN2	SD	0.54
7	DIS1	SD	0.39
8	PUN5	SD	0.56
9	DIS2	SD	0.45
10	**ACC1**	**SA**	**-0.16**
11	ALI2	SD	0.48
12	**ACC2**	**SA**	**-0.25**
13	VIO2	SD	0.36
14	IMP1	SA	0.11
15	DIS3	SD	0.45
16	PUN6	SD	0.44
17	PUN4	SD	0.42
18	DIS5	SD	0.42
19	PUN7	SD	0.51
20	**AFF2**	**SA**	**-0.23**

21	ALI1	SD	0.43
22	DIS4	SD	0.45
23	ALI3	SD	0.50
24	**COM1**	**SA**	**-0.14**
25	VIO1	SD	0.36

*Items in bold represent those with negative point-biserial correlations

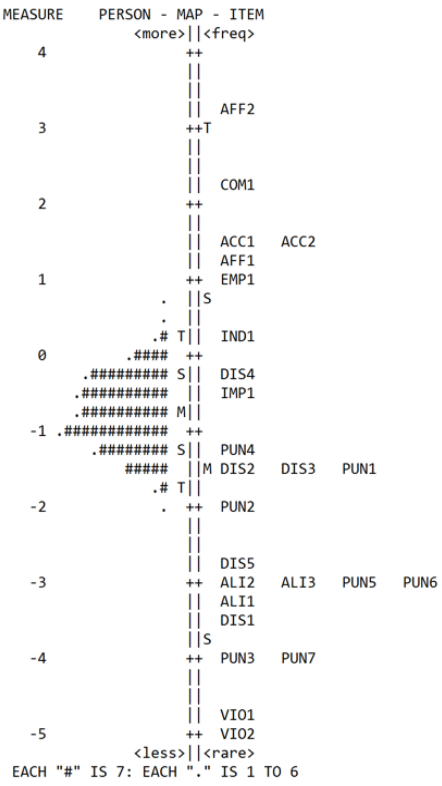
Figure 4-5: *Phase III: Validation Study – Dimensionality Map, Scale As-Is*



```
    Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units
                                    Eigenvalue   Observed   Expected
Total raw variance in observations     =      92.6941 100.0%          100.0%
 Raw variance explained by measures    =      67.6941  73.0%           72.8%
   Raw variance explained by persons   =       4.6598   5.0%            5.0%
   Raw Variance explained by items     =      63.0343  68.0%           67.8%
 Raw unexplained variance (total)      =      25.0000  27.0% 100.0%    27.2%
   Unexplained variance in 1st contrast =      5.6633   6.1%  22.7%
   Unexplained variance in 2nd contrast =      1.6758   1.8%   6.7%
   Unexplained variance in 3rd contrast =      1.3827   1.5%   5.5%
   Unexplained variance in 4th contrast =      1.2347   1.3%   4.9%
   Unexplained variance in 5th contrast =      1.1494   1.2%   4.6%
```

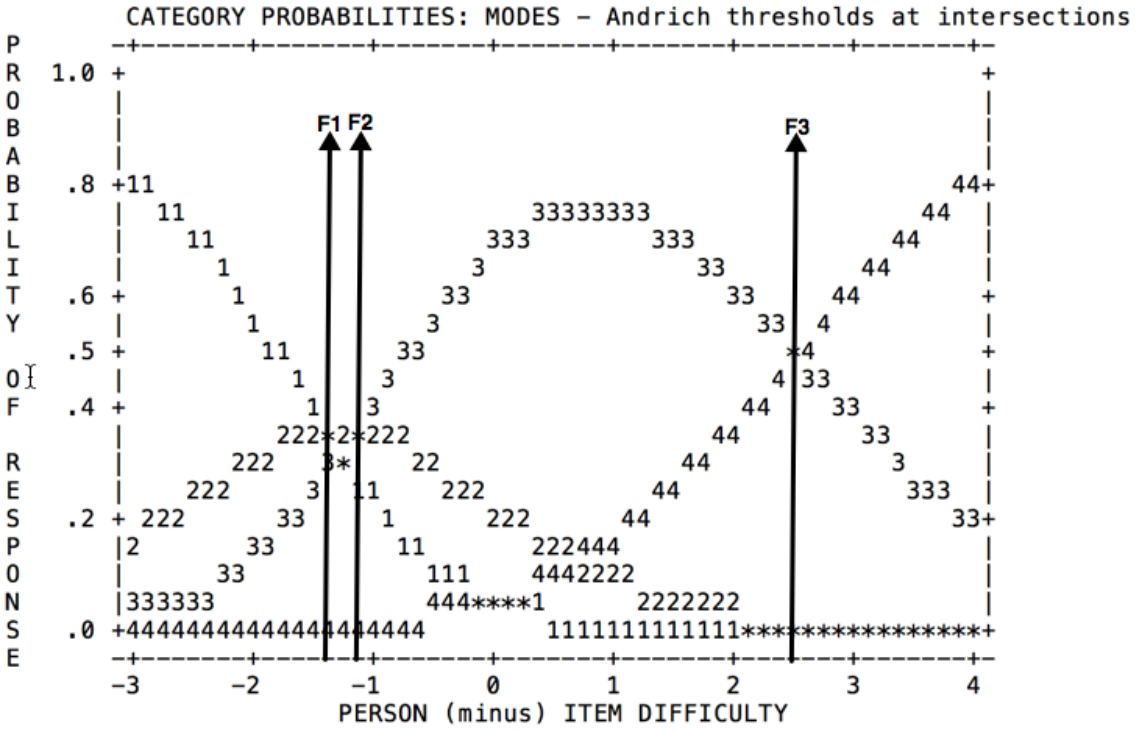
*Elements highlighted are key to considerations of unidimensionality

Figure 4-6: *Phase III: Validation Study – Variable Map, Scale As-Is*



```
MEASURE    PERSON - MAP - ITEM
              <more>||<freq>
    4               ++
                    ||
                    ||
                    ||  AFF2
    3               ++T
                    ||
                    ||
                    ||  COM1
    2               ++
                    ||
                    ||  ACC1   ACC2
                    ||  AFF1
    1               ++  EMP1
                .   ||S
                .   ||
               .# T||  IND1
    0         .####  ++
          .########## S||  DIS4
         .##########  ||  IMP1
        .########### M||
   -1 .#############  ++
          .######## S||  PUN4
              #####  ||M DIS2   DIS3   PUN1
                .# T||
   -2             .  ++  PUN2
                    ||
                    ||
                    ||  DIS5
   -3               ++  ALI2   ALI3   PUN5   PUN6
                    ||  ALI1
                    ||  DIS1
                    ||S
   -4               ++  PUN3   PUN7
                    ||
                    ||
                    ||  VIO1
   -5               ++  VIO2
                <less>||<rare>
 EACH "#" IS 7: EACH "." IS 1 TO 6
```

Figure 4-7: *Phase III: Validation Study – Rating Scale Probabilities, Scale As-Is*



The rating scale probability graph shows rating-scale category "2 = Disagree" as not being used at the .5 (50%) probability level. Additionally, it denotes thresholds F1 and F2 almost at the same threshold. Both of these results indicated the category "2 = Disagree" could be collapsed if the scale were used in this fashion. This would result in a three-category rating scale (instead of four). The variable map (Figure 4-6) suggested a stable, one category scale, with items ranging from affirmative to violent which was in line with the original construct theory. Variance level was high (73%) and the first unexplained construct was low (6.10%). These findings suggested that the instrument had good dimensionality. However, the eigenvalue was high (5.66). A high eigenvalue indicates that upwards of 6 items measure the variable in a way that was different than the other items. Collectively, these three figures indicated that the variable had two dimensions, not one. Similar findings of two dimensions had been found in the pilot

study. Also like the pilot study findings, the variable map represented largely what was assumed, that easy-to-endorse items are displayed at the top and difficult-to-endorse items on the bottom (Figure 4-6, right-side column). The sample mean, as indicated in Figure 4-6 on the left-side column and denoted by "M", fell just above the item means. This indicates the sample found the items level of easiness-to-answer as expected.

As in the pilot study (Table 4.1), negative point-biserial correlations were produced for items 1, 2, 4, 10, 12, 20, and 24 (Table 4.2). These items represent the items that were located in the more favorable levels, as well as two of the three items that were in the mid favorable level. The point-biserial correlation results alone suggested that these seven items had low reliability for measuring the variable. However, when combined with dimensionality results, it became increasingly clear (as it had with the pilot study) that the scale was measuring the variable of interest; however, contrary to the theory, the variable of interest was not a single dimension. As was evidenced in the pilot study, the data supported a conclusion that the variable of interest was represented by two distinct dimensions. This finding highlighted the need to engage in further investigation to determine the scale's validity.

4.3.3 Phase III: Validation Study Data Analyses – Step Two

Additional testing using the larger sample was necessary to determine what, if anything, could be done regarding the seven items' (1, 2, 4, 10, 12, 20, & 24) negative point-biserial correlations. Specifically, the researchers sought to determine if these seven items' negative point-biserial correlations could be resolved by reverse coding the response options. It was considered possible that by recoding these seven items, they could be retained among the rest of the items originally suggested by the panel of experts.

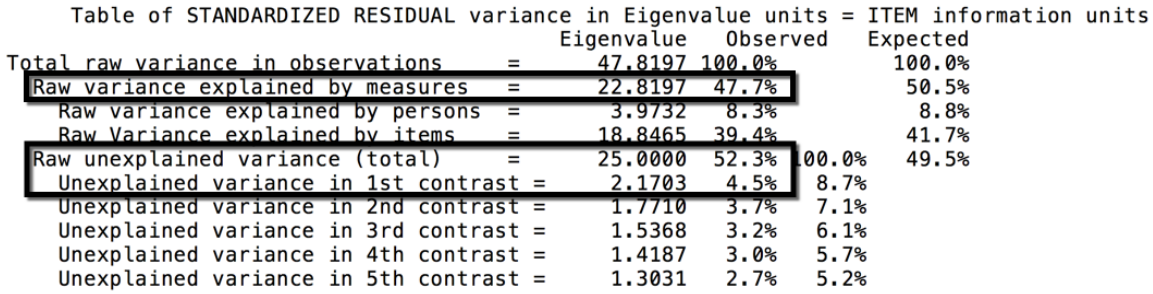
As such, these seven items were reverse coded and the instrument's point-biserial correlations, dimensionality, and variable map were reconsidered. The results of this process are displayed in Table 4.3 and Figures 4-8 and 4-9. Rating scale probability graphs were not completed for this stage. There was no utility in knowing the rating scale categories' functionality unless it could be made clear that the reverse coding of these seven items assisted in correcting the observed negative point-biserial correlations.

Table 4.3: *Phase III: Validation Study – Point-Biserial Correlations, Reverse Coding the Negative Point-Biserial Correlations*

Item #	Item Code	Best Desired Answer	Pt. Biserial Correlation
1	AFF1	SA	0.35
2	IND1	SA	0.41
3	PUN1	SD	0.55
4	EMP1	SA	0.45
5	PUN3	SD	0.40
6	PUN2	SD	0.56
7	DIS1	SD	0.43
8	PUN5	SD	0.59
9	DIS2	SD	0.42
10	ACC1	SA	0.51
11	ALI2	SD	0.56
12	ACC2	SA	0.58
13	VIO2	SD	0.40
14	**IMP1**	**SA**	**-0.10**
15	DIS3	SD	0.51
16	PUN6	SD	0.52
17	PUN4	SD	0.41
18	DIS5	SD	0.50
19	PUN7	SD	0.62
20	AFF2	SA	0.42
21	ALI1	SD	0.54
22	DIS4	SD	0.51
23	ALI3	SD	0.56
24	COM1	SA	0.45
25	VIO1	SD	0.39

*Items in bold represent those with negative point-biserial correlations

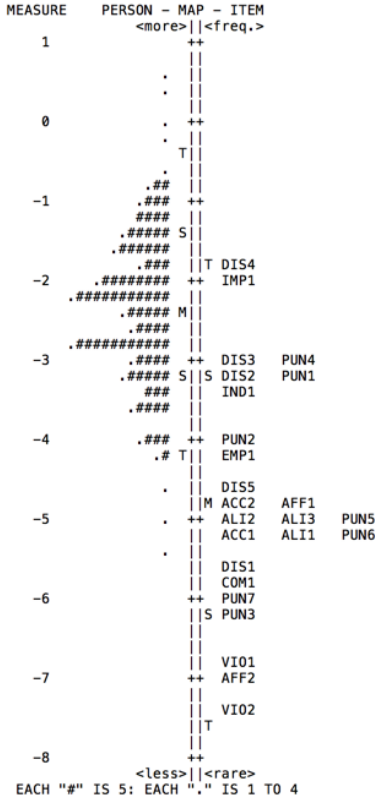
Figure 4-8: *Phase III: Validation Study – Dimensionality Map, Reverse Coding the Negative Point-Biserial Correlations*



```
    Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units
                                    Eigenvalue   Observed   Expected
Total raw variance in observations     =      47.8197 100.0%          100.0%
  Raw variance explained by measures   =      22.8197  47.7%           50.5%
    Raw variance explained by persons  =       3.9732   8.3%            8.8%
    Raw Variance explained by items    =      18.8465  39.4%           41.7%
  Raw unexplained variance (total)     =      25.0000  52.3% 100.0%    49.5%
    Unexplained variance in 1st contrast =     2.1703   4.5%   8.7%
    Unexplained variance in 2nd contrast =     1.7710   3.7%   7.1%
    Unexplained variance in 3rd contrast =     1.5368   3.2%   6.1%
    Unexplained variance in 4th contrast =     1.4187   3.0%   5.7%
    Unexplained variance in 5th contrast =     1.3031   2.7%   5.2%
```

*Elements highlighted are key to considerations of unidimensionality

Figure 4-9: *Phase III: Validation Study – Variable Map, Reverse Coding the Negative Point-Biserial Correlations*



```
MEASURE    PERSON - MAP - ITEM
              <more>||<freq.>
    1               ++
                    ||
                  . ||
                  . ||
                    ||
    0             . ++
                  . ||
                  T||
                  . ||
                .## ||
   -1         .### ++
              #### ||
             .##### S||
            .###### ||
               .### ||T DIS4
   -2     .######## ++  IMP1
      .############ ||
             .##### M||
              .#### ||
      .############ ||
   -3         .#### ++  DIS3   PUN4
             .##### S||S DIS2   PUN1
               ###  ||  IND1
              .#### ||
                    ||
   -4          .### ++  PUN2
               .# T||  EMP1
                    ||
                  . ||  DIS5
                    ||M ACC2   AFF1
   -5             . ++  ALI2   ALI3   PUN5
                    ||  ACC1   ALI1   PUN6
                  . ||
                    ||  DIS1
                    ||  COM1
   -6               ++  PUN7
                    ||S PUN3
                    ||
                    ||
                    ||  VIO1
   -7               ++  AFF2
                    ||
                    ||  VIO2
                    ||T
                    ||
   -8               ++
              <less>||<rare>
EACH "#" IS 5: EACH "." IS 1 TO 4
```

The results of the reverse coding process proved to not support the construct theory. Although all but one item (IMP1; Item 14, the impartial item) had positive point-biserial correlations, the instrument's level of variance was 47.70% and the eigenvalue was 2.1. Both of these later two values fall short of the desired levels of ≥50% variance

level and <2.0 eigenvalue. Additionally, the recoding process essentially changed the meaning of the recoded items such that they were switched from representing attitudes such as "affirmative" to being indicative of "not affirming" attitudes. The endorsement of "not affirming" items (Items 1 and 20) became just as difficult to endorse as were items about violence. This finding can be seen on the variable map (Figure 4-9) where AFF items and VIO items become intermixed. Said another way, this would mean it is as difficult to endorse a not affirming statement as it would be to endorse a violent statement. This is contrary to the theory of items being linear in measuring attitude making the scale in this fashion contrary to the the theoretical development. Person answering to item difficulty, as displayed in the variable map (Figure 4-9), also run contrary to the assumption of this study that mental health professionals (MHPs) would have more favorable attitudes. The variable map shows the sample as having means scores which are dismissive and punishing, evidenced by the number of DIS and PUN items along the sample's mean (M) and first standard deviation (SD) (see placement of DIS2, DIS3, DIS4, PUN1, and PUN4).

The results after the the recoding of items 1, 2, 4, 10, 12, 20, and 24, indicate a non-single dimension, contrary to the one theorized, and a sample with poor attitudes (contrary to the assumption they would be more favorable). Although results were expected to mirror those found with the recoding of these seven items, the opposite procedure was completed: the original positive point-biserial items (18 items total) were reverse coded to negatives; the original seven negative point-biserial items (1, 2, 4, 10, 12, 20, and 24) were left with their original coding. The results after this inverted investigation simply inverted the scale as the one shown in Table 4.3 and Figures 4-8 and

4-9. In other words, reverse coding the original positive point-biserial correlated items produced the entire scale inverted which still gave results inconsistent with the theoretical framework.

4.3.4 Phase III: Validation Study Data Analyses – Step Three

Based on the results produced in Step Two, the researchers returned focus to the two-dimension structure originally indicated (Pilot Study and Validation Study Step One). Subsequent analyses used the original coding scheme for items 1, 2, 4, 10, 12, 20, and 24. These seven items were grouped together as a "First Dimension" and they represented the more favorable attitude towards PLHIV. The remaining 18 items, were labeled as the "Second Dimension" and they represented less favorable attitudes. Point-biserial correlations, Rasch factor analysis, and variable maps were then considered with the dimensions separated. The same statistical cut-offs were used (i.e., positive point-biserial correlations; dimensionality of ≥50% variance level, ≤10% first contrasting variance level, and <2.0 eigenvalue). The results of these diagnostics are depicted in Table 4.4 (both categories' point-biserial correlations shown together), Figures 4-10 and 4-11 (dimensionalities shown separately), and Figure 4-12 (both dimensions' persons and items indices shown together).

Table 4.4: *Phase III: Validation Study – Point-Biserial Correlations, Two Dimensions (First and Second) Run Separately*

Item #	Item Code	Best Desired Answer	Pt. Biserial Correlation
		First Dimension	
1	AFF1	SA	0.52
2	IND1	SA	0.62
4	EMP1	SA	0.63
10	ACC1	SA	0.58

12	ACC2	SA	0.62
20	AFF2	SA	0.40
24	COM1	SA	0.51
		Second Dimension	
3	PUN1	SD	0.57
5	PUN3	SD	0.41
6	PUN2	SD	0.58
7	DIS1	SD	0.43
8	PUN5	SD	0.61
9	DIS2	SD	0.47
11	ALI2	SD	0.56
13	VIO2	SD	0.40
14	**IMP1**	**SA**	**-0.02**
15	DIS3	SD	0.52
16	PUN6	SD	0.52
17	PUN4	SD	0.44
18	DIS5	SD	0.50
19	PUN7	SD	0.60
21	ALI1	SD	0.53
22	DIS4	SD	0.52
23	ALI3	SD	0.56
25	VIO1	SD	0.39

*Items in bold represent those with negative point-biserial correlations

Figure 4-10: *Phase III: Validation Study – Dimensionality Map, First Dimension*

Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	12.1780	100.0%		100.0%
Raw variance explained by measures =	5.1780	42.5%		44.7%
Raw variance explained by persons =	2.3922	19.6%		20.6%
Raw Variance explained by items =	2.7857	22.9%		24.0%
Raw unexplained variance (total) =	7.0000	57.5%	100.0%	55.3%
Unexplained variance in 1st contrast =	1.5754	12.9%	22.5%	
Unexplained variance in 2nd contrast =	1.3950	11.5%	19.9%	
Unexplained variance in 3rd contrast =	1.1079	9.1%	15.8%	
Unexplained variance in 4th contrast =	1.0212	8.4%	14.6%	
Unexplained variance in 5th contrast =	.9461	7.8%	13.5%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-11: *Phase III: Validation Study – Dimensionality Map, Second Dimension*

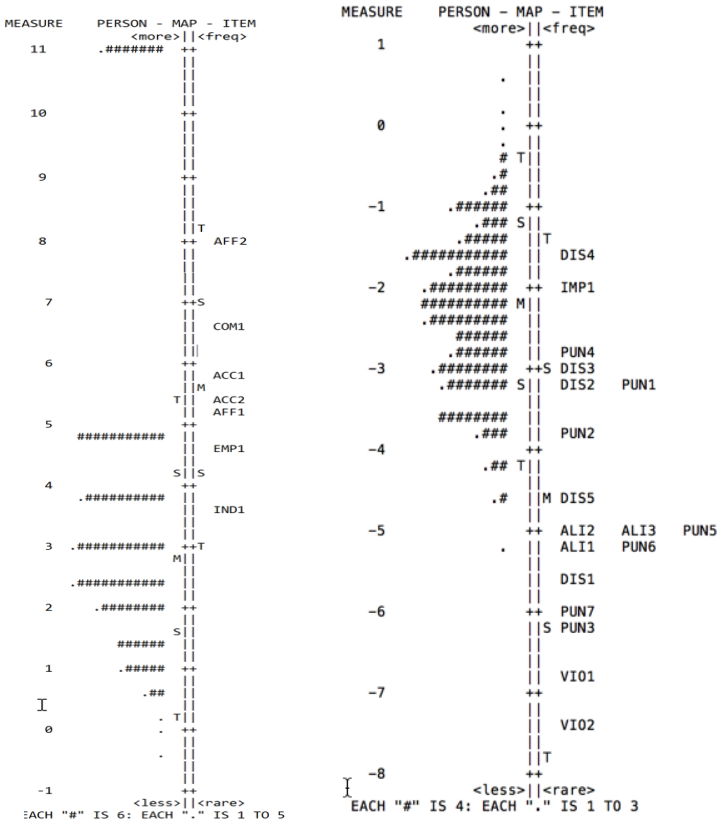
Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed	Expected
Total raw variance in observations =	37.3445	100.0%	100.0%
Raw variance explained by measures =	19.3445	51.8%	54.2%
Raw variance explained by persons =	3.4512	9.2%	9.7%
Raw Variance explained by items =	15.8932	42.6%	44.6%
Raw unexplained variance (total) =	18.0000	48.2% 100.0%	45.8%
Unexplained variance in 1st contrast =	1.9423	5.2% 10.8%	
Unexplained variance in 2nd contrast =	1.5929	4.3% 8.8%	
Unexplained variance in 3rd contrast =	1.3798	3.7% 7.7%	
Unexplained variance in 4th contrast =	1.3141	3.5% 7.3%	
Unexplained variance in 5th contrast =	1.1993	3.2% 6.7%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-12: *Phase III: Validation Study – Variable Maps, Two Dimensions (First and Second) Run Separately*

First Dimension Second Dimension



These results produced two dimensions that related to the measurement of the attitude towards PLHIV variable. Variable maps (Figure 4-12) display the two dimensions, first and second, as they delineate when separated. This is evidenced by

both dimensions having participants falling in expected ranges. The sample found empathetic and indifferent questions easier to answer in the more favorable dimension. However, the same had greater difficulty endorsing items at the affirming level. In the less favorable dimension, the sample largely were only dismissive and punishing. While these results may not sound idea for a group of MHPs, it is certainly more appropriate than finding it easy to endorse violent items. This indicates a more favorable attitude within the second dimension.

Each dimension had evidence which supported they were strong in unidimensionality grouped with items of the same favorable level. For the first dimension, note, however, the dimensionality is below 50% (42.5%) and the first unexplained contrast is over 10% (12.90%), yet the eigenvalue is under 2.0 (1.5). This indicates a likely appropriate unidimensionality for the more favorable dimension. More data would be needed to determine if this is an accurate conclusion. That is, an insufficient portion of this sample fell into this lowest range to draw any statistically sound conclusions. Despite that fact, the second, less favorable dimension had good dimensionality at 51.80%, a first unexplained contrast of 5.20%, and an eigenvalue under 2.0 (1.9). These figures suggest good unidimensionality for this dimension.

When first and second dimensions are analyzed separately, all but one item's (Item 14; IMP1) point-biserial correlations are positive, meaning they are reliable items for their respective dimension and to the scale overall. The IMP1 item (Item 14), when kept with the second dimension, has a negative point-biserial correlation. This indicates that Item 14 is not reliable when grouped with the second dimension (less favorable

attitude). Item 14, as a result, needed to be re-grouped to see if it fit with the first dimension.

4.3.5 Phase III: Validation Study Data Analyses – Step Four

The IMP1 item is the impartial item. Specifically, IMP1 reads, "It does not matter one way or another if someone is a PLHIV." This item had a negative point-biserial correlation when considered with the second, less favorable dimension. Given all other evidence that the items are appropriate for the instrument (demonstrated in validation study analysis Step Three), the IMP1 item was considered as having a better fit with the first, more favorable items. It is noteworthy to recall that previous data explorations demonstrated that the first dimension included two of the three mid-range favorable levels (COMP1, Item 24, and IND1, Item 2). The IMP1 item is the third item of that mid-range, meaning that the first dimension should include this item. Further proof that this items is incorrectly sorted in the second dimension is found when considering that the desired answer for this item, as is true for all the items in the first dimension, was "Strongly Agree." The desired response for the items in the second, less favorable dimension is "Strongly Disagree."

To explore the effect of the IMP1 item re-sort, it's original response options were retained (i.e., it was *not* recoded as it was in Step Three) and it was moved to the first, more favorable attitude dimension. The same diagnostics (point-biserial correlations, Rasch factor analysis, and variable maps) were again analyzed with the same statistical cut-offs of all positive point-biserial correlations; dimensionality of ≥50% variance level, ≤10% first contrasting variance level, and <2.0 eigenvalue. The results of each are displayed in Table 4.5 (both categories point-biserial correlations shown together),

Figures 4-13 and 4-14 (dimensions shown separately), and Figure 4-15 (both dimensions' persons and items indices shown together).

Table 4.5: *Phase III: Validation Study – Point-Biserial Correlations, Two Dimensions (First and Second) Run Separately with "Impartial" Item Moved to First Dimension*

Item #	Item Code	Best Desired Answer	Pt. Biserial Correlation
	First Dimension		
1	AFF1	SA	0.44
2	IND1	SA	0.61
4	EMP1	SA	0.56
10	ACC1	SA	0.52
12	ACC2	SA	0.58
14	IMP1	SA	0.59
20	AFF2	SA	0.36
24	COM1	SA	0.45
	Second Dimension		
3	PUN1	SD	0.58
5	PUN3	SD	0.40
6	PUN2	SD	0.58
7	DIS1	SD	0.43
8	PUN5	SD	0.60
9	DIS2	SD	0.46
11	ALI2	SD	0.56
13	VIO2	SD	0.37
15	DIS3	SD	0.54
16	PUN6	SD	0.52
17	PUN4	SD	0.46
18	DIS5	SD	0.48
19	PUN7	SD	0.58
21	ALI1	SD	0.51
22	DIS4	SD	0.55
23	ALI3	SD	0.56
25	VIO1	SD	0.37

*Items in bold represent those with negative point-biserial correlations

Figure 4-13: *Phase III: Validation Study – Dimensionality Map, First Dimension with "Impartial" Item Moved to First Dimension*

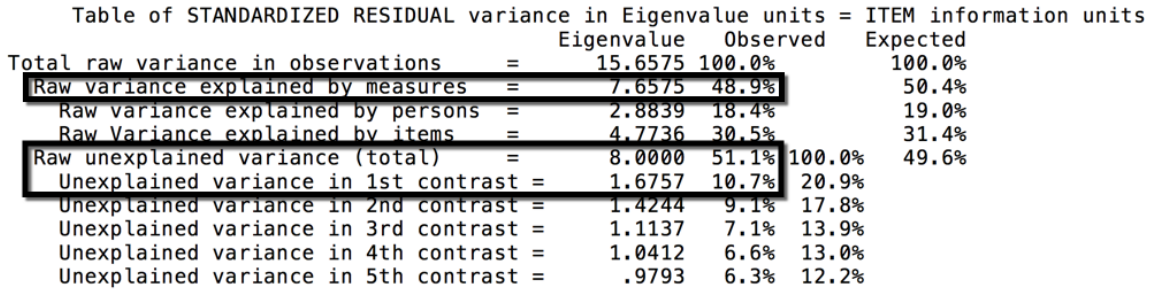


Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	15.6575	100.0%		100.0%
Raw variance explained by measures =	7.6575	48.9%		50.4%
Raw variance explained by persons =	2.8839	18.4%		19.0%
Raw Variance explained by items =	4.7736	30.5%		31.4%
Raw unexplained variance (total) =	8.0000	51.1%	100.0%	49.6%
Unexplained variance in 1st contrast =	1.6757	10.7%	20.9%	
Unexplained variance in 2nd contrast =	1.4244	9.1%	17.8%	
Unexplained variance in 3rd contrast =	1.1137	7.1%	13.9%	
Unexplained variance in 4th contrast =	1.0412	6.6%	13.0%	
Unexplained variance in 5th contrast =	.9793	6.3%	12.2%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-14: *Phase III: Validation Study – Dimensionality Map, Second Dimension with "Impartial" Item Removed from Second Dimension*

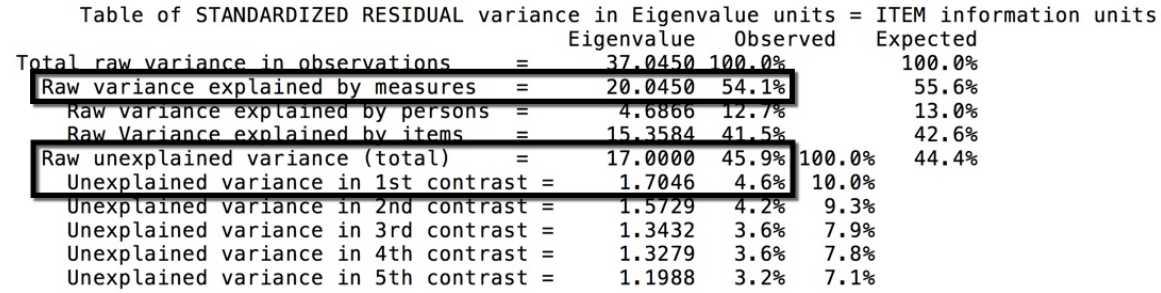


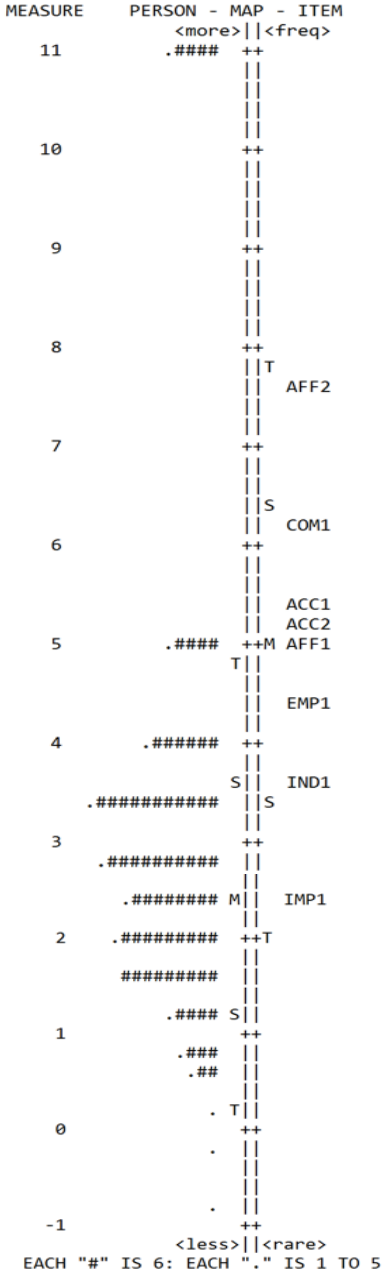
Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	37.0450	100.0%		100.0%
Raw variance explained by measures =	20.0450	54.1%		55.6%
Raw variance explained by persons =	4.6866	12.7%		13.0%
Raw Variance explained by items =	15.3584	41.5%		42.6%
Raw unexplained variance (total) =	17.0000	45.9%	100.0%	44.4%
Unexplained variance in 1st contrast =	1.7046	4.6%	10.0%	
Unexplained variance in 2nd contrast =	1.5729	4.2%	9.3%	
Unexplained variance in 3rd contrast =	1.3432	3.6%	7.9%	
Unexplained variance in 4th contrast =	1.3279	3.6%	7.8%	
Unexplained variance in 5th contrast =	1.1988	3.2%	7.1%	

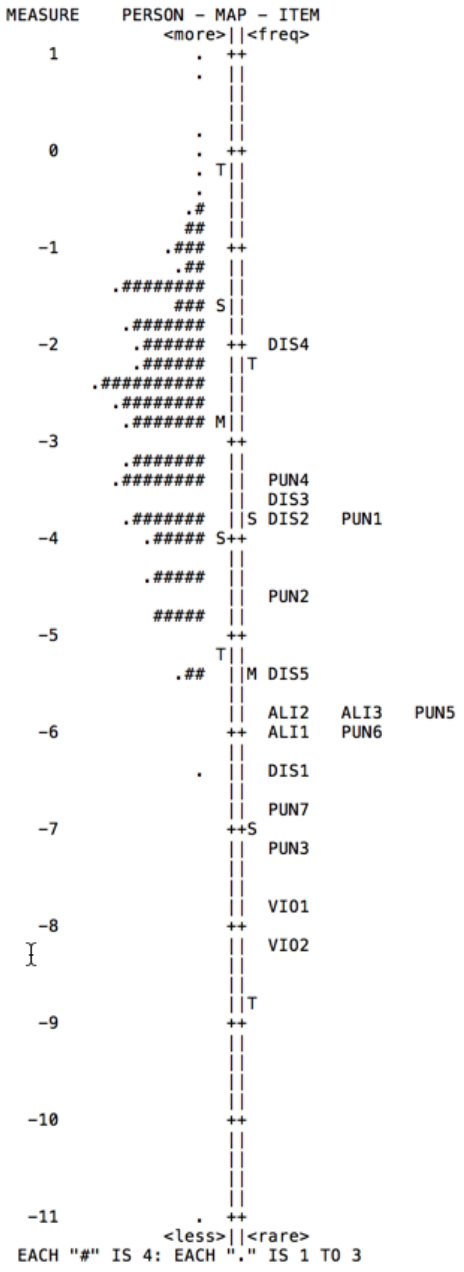
*Elements highlighted are key to considerations of unidimensionality

Figure 4-15: *Phase III: Validation Study – Variable Maps, Two Dimensions (First and Second) Run Separately with "Impartial" Item Moved to First Dimension*

First Dimension



Second Dimension



These results demonstrated that the IMP1, impartial Item 14, (with its original coding where "4 - Strongly Agree" is the desired answer) is a better fit with the first, mid

to more favorable dimension. This conclusion was supported by the evidence that all items had positive point-biserial correlations within each of the two dimensions.

For the second dimension, there remains an appropriate measure of the lower region of the scale remained (note dimensionality remains above 50%, the first unexplained contrast is 4.6%, and there is only a 1.7 eigenvalue), insofar as it measures this set of items appropriately and they are the less favorable items of the original expected scale. The results of the removal of the IMP1 item (Item 14) from this dimension suggest that these items are an appropriate scale for the second dimension. Further, a sufficient number of participants answered in this region to allow the researchers to draw initial conclusions. The variable map shows that the items along the variable run in a linear fashion such that the more difficult to endorse items (VIO1 and VIO2) are at the bottom. The variable map also shows that persons who score higher in this dimension, consistent with the assumption, have more favorable attitudes towards PLHIV.

The first dimension had less than 50% (48.9%), and the first unexplained contrast was high (10.70%), but the eigenvalue is less than 2.0 (1.6). Combined, these findings are strong indicators that there is an appropriate level of unidmensionality for the first dimension, but the scale did not meet this study's minimum requirements to make that determination. That means that there is indication of possibly an appropriate measure of this level of favorable for the construct, further study is needed to know with any certainty.

When viewed in this fashion, the notion of two dimensions of the construct was strengthened. Both dimensions appear to measure the construct of attitude towards

PLHIV. The first dimension requires further study. Conversely, the second dimension appears to be an appropriate measure because all items are positively correlated to the dimension, and the items align to the variable in a linear fashion.

The examination of the data did not stop at this point, however, as the second dimension and the sample's scores on it did not perform as assumed. Note the negative levels of the second dimension on the right-side graphic of Figure 4-15, as well as how the mean of persons falls in the negative range (around -3). It was not clear why this was happening. This uncertainty paved the way for further considerations of the pattern of the items themselves. This in turn drew out two hypotheses which needed to be explored for final conclusions regarding the MHP-PLHIV-AS. These two hypotheses will be examined in the following sections.

4.4 Phase III: Validation Study Two Compelling and Competing Hypotheses

4.4.1 Phase III: Validation Study – Hypothesis One, Summary

The first hypothesis was the original construct theory of a single dimension of the attitude construct, but required addressing the nature of the desired answer of individual items. As is seen in Table 4.5, the desired answers for some items are strongly agree (the first dimension) while desired answers for others (the second dimension) is strongly disagree. The intent of the MHP-PLHIV-AS as a whole was to identify less favorable to more favorable attitudes towards PLHIV. It therefore is logically assumed that the manner in which a participant answers the scale's individual items generates a scale total score which then suggests the level at which the continuum of favorability the participant would fall. A higher score would mean a more favorable attitude. But this cannot be accomplished if 17 of the instrument's items ideal answer is strongly disagree. The result

of that scoring response would be a “1” score for those items (i.e., the bottom dimension). Under the view of classical test theory (CTT), if the answers for those items were to hold the same amount of weight to the overall score as the other, first dimension items, then the bottom category items needed to be recoded. Those 17 items needed to have a more favorable response equate to a score of “4”, not a score of “1.” This would explain why, when considering these items as a category unto themselves, the sample scores so low (see Figure 4-15).

For example, strongly disagreeing with "HIV/AIDS is a punishment from God" (Item 25, VIO1; see Appendix F) would give a “1” score, but strongly disagreeing with such a statement would be a more favorable attitude and therefore should have a “4” score. Again, from a CTT standpoint, the higher the score the more favorable the attitude. This was confirmed when reviewing descriptive, frequency tables for individual items. The data of these tables fits within the assumption that this type of population would have more favorable attitude towards PLHIV. According to the descriptive statistics, the sample does, on average, demonstrate more favorable attitudes on such individual items. But, the bottom dimension, as explained in the previous Step Four analysis, indicates the sample scored less favorable overall. Therefore, the dimension needed to have its items reverse coded in order to reflect the attitude that participants were attempting to communicate by their answers. Consideration of this hypothesis is described in the next section, Section 4.3.2, Validation Study Hypothesis One, Diagnostics.

4.4.2 Phase III: Validation Study – Hypothesis One, Diagnostics

To test the hypothesis that the MHP-PLHIV-AS is a single dimension, analyses were conducted. Keeping in mind that the reverse coding for the negative statements had been done, thus the meaning of those statements become rephrased to match the desired more favorable attitude. For these analyses, the data set used reverse coded data for those negative statement items. As such, the meaning behind "HIV/AIDS is a punishment from God" (Item 25, VIO1), for example, was recoded such that responses would indicate the degree to which participants agreed with this statement, "HIV/AIDS is *not* a punishment from God." The first step in testing this hypothesis was to review the diagnostics for the point-biserial correlations, the dimensionality map, and the variable map. As in previous analyses, the guidelines followed remained at finding all positive point-biserial correlations, dimensionality as gauged by ≥50% variance level, ≤10% first contrasting variance, and < 2.0 eigenvalue. Rating scale probability was again considered, with the minimum probability of category levels set as before at .5 (50%). The results of each are displayed in Table 4.6, and Figures 4-16, 4-17, and 4-18 respectively.

Table 4.6: *Phase III: Validation Study – Point-Biserial Correlations, Reverse Coding the Negative Statements, One Dimension*

Item #	Item Code	Statement	Dimension	Pt. Biserial Correlation
1	AFF1	+	First	0.34
2	IND1	+	First	0.46
3	PUN1	+ (Not -)	Second	0.55
4	EMP1	+	First	0.45
5	PUN3	+ (Not -)	Second	0.39
6	PUN2	+ (Not -)	Second	0.54
7	DIS1	+ (Not -)	Second	0.41
8	PUN5	+ (Not -)	Second	0.56
9	DIS2	+ (Not -)	Second	0.40
10	ACC1	+	First	0.49

11	ALI2	+ (Not -)	Second	0.55
12	ACC2	+	First	0.59
13	VIO2	+ (Not -)	Second	0.37
14	IMP1	+	First	0.38
15	DIS3	+ (Not -)	Second	0.51
16	PUN6	+ (Not -)	Second	0.51
17	PUN4	+ (Not -)	Second	0.41
18	DIS5	+ (Not -)	Second	0.46
19	PUN7	+ (Not -)	Second	0.58
20	AFF2	+	First	0.40
21	ALI1	+ (Not -)	Second	0.50
22	DIS4	+ (Not -)	Second	0.53
23	ALI3	+ (Not -)	Second	0.55
24	COM1	+	First	0.42
25	VIO1	+ (Not -)	Second	0.36

Figure 4-16: *Phase III: Validation Study – Dimensionality Map, Reverse Coding the Negative Statements, One Dimension*

Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	48.9529	100.0%		100.0%
Raw variance explained by measures =	23.9529	48.9%		50.7%
Raw variance explained by persons =	8.3368	17.0%		17.7%
Raw Variance explained by items =	15.6161	31.9%		33.1%
Raw unexplained variance (total) =	25.0000	51.1%	100.0%	49.3%
Unexplained variance in 1st contrast =	2.0179	4.1%	8.1%	
Unexplained variance in 2nd contrast =	1.7107	3.5%	6.8%	
Unexplained variance in 3rd contrast =	1.6333	3.3%	6.5%	
Unexplained variance in 4th contrast =	1.3867	2.8%	5.5%	
Unexplained variance in 5th contrast =	1.3382	2.7%	5.4%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-17: *Phase III: Validation Study – Variable Map, Reverse Coding the Negative Statements, One Dimension*

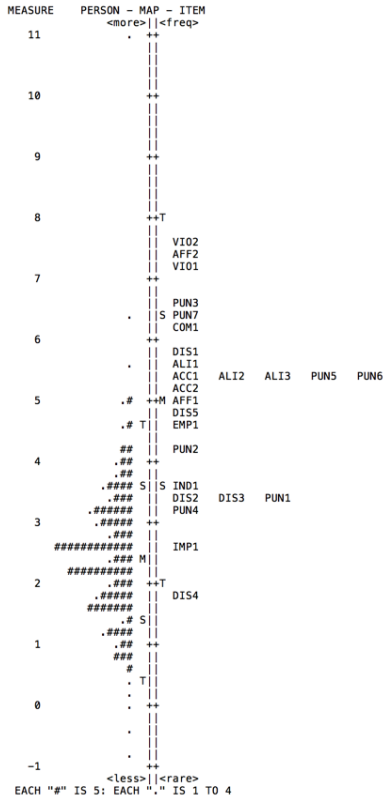
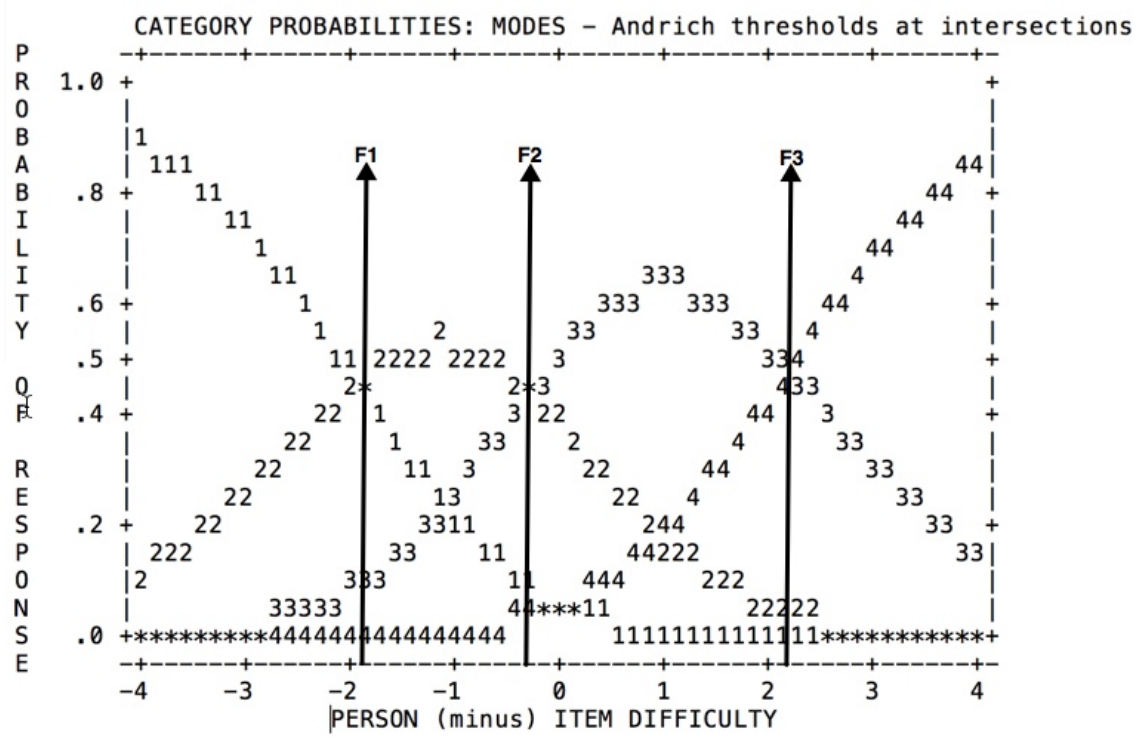


Figure 4-18: *Phase III: Validation Study – Rating Scale Probabilities, Reverse Coding the Negative Statements, One Dimension*



With the negative statements recoded to reflect a more favorable response pattern, the point-biserial correlations remain demonstrating reliability for all items within the one dimension. The variance level (48.90% or 1.10% below the preferred level), fell short of the 50% desired level. And, the first unexplained construct accounted for only 4.10% of the unexplained variance. This alone would not discount the scale in this fashion as, again, dimensionality is a judgement call made by considering all points of data (Linacre, 2005, 2016). The biggest challenge to dimensionality is that the first unexplained construct had a 2.0 eigenvalue. This means that the MHP-PLHIV-AS has the equivalent of two items which may or may not fit within the unidimensionality of the instrument. This finding falls outside the established parameters of the study and disallows a conclusion that the instrument represents an appropriate single dimension use. Further, the variable map posed challenges to accepting this hypothesis that the instrument is one dimension of the construct. Rather, it appears to have two independent dimensions that function together.

Evidence of this notion can be found in Figure 4-17. Figure 4-17's persons-to-item indices is a bit askew from what would be expected. As found in the preceding analysis, the items become intermixed in a way that is contrary to the assumption of more favorable attitudes from MHPs. For example, it became harder for participants to endorse the item about being not dismissive; being impartial became an item that was difficult to endorse; and being affirming and not violent become the easiest items to endorse. In short, the items, once again, did not align along the variable in a way that supported the theory of a single dimension manner.

The variable map (Figure 4-17) also demonstrated that the manner in which respondents scored ran contrary to the more favorable MHP attitude assumption. While it was expected that mental health professionals (MHPs) would overall be more favorable in their attitude towards PLHIV, the variable map indicated that, when considered in this fashion, the best that could be said is that they are "not dismissing," somewhat "not punishing," and on average are "impartial." When analyzed in this manner, the mean of items falls squarely at the AFF1, affirming item (i.e., "PLHIV experience unique problems due to the stigma associated with HIV/AIDS") in comparison to the mean of the sample which is the IMP1 item (i.e., "It does not matter one way or another if someone is a PLHIV"). In fact, the mean of persons as being impartial, does not support the assumption that mental health professionals are more favorable in their attitude towards PLHIV. Further, the items aligned on the scale in this fashion seem nonsensical. The very fact that the affirming (AFF1) item is the mean item for the scale is very contradictory to the construct theory of a single dimension measure of the attitude construct. It also runs contrary to the content evaluation panel's qualitative view of affirming being the most favorable attitude.

The hypothesis being considered is that the instrument can provide a single dimension measurement of the variable when the negatively-weighted items (scores that equal 1) are recoded to be positively weighted (scores that equal 4). The second set of diagnostics considered regarding this hypothesis included investigating fit of items, and the expected scores.

Rasch fit statistics "help to determine whether the item estimations may be held as meaningful quantitative summaries of the observation" (Bond & Fox, 2015, p. 35). In

other words, Rasch fit statistics answer the question, "To what extent does an item influence the measurement of only the one construct of under investigation?" There are both infit and outfit statistics which must be considered. The infit statistic is an inlier-sensitive, or information-weighted, fit statistic (Bond & Fox, 2016; Linacre, 2016). The infit statistic "emphasizes residuals for items that are close to the person's ability" Stelmack et al., 2004). Infit is weighted based on the information gathered when considering persons to items, and vice-versa (Bond & Fox, 2015; Linacre, 2002). Outfit is based on outliner information, often related to difficulty persons had in answering the question (Linacre, 2002). In- and out-fit statistics report the size of randomness for the items of an instrument. Fit statistics are a Chi-square divided by the degrees of freedom, are reported in positive numbers where a "1.0" refers to a 100% fit of an item to the construct of investigation, and are reported as mean-squared values (Linacre, 2002; Wright & Masters, 1982). Pure fit of all items on a construct is not necessarily feasible, as "all empirical data departs from the model to some extent" (Wright & Masters, 1982, p. 370). Guidelines to determine acceptable levels of item fit have been established as benchmarks for researchers to aide in decision making (Bond & Fox, 2015; Linacre, 2002; Wright & Masters, 1982). While some have suggested that any fit with a value between .05 and 1.5 suggests an item is "productive for measurement" (Linacre, 2002), others in more recent years have advocated for the value to fall between .75 and 1.3 (Bond & Fox, 2015). For purposes this study, the researchers used the more conservative range (.75 – 1.3 item mean-square). It should be noted that while fit statistics can aide in decision making and meaning forming regarding an instrument, they do not necessarily indicate that an item should be removed, or that the instrument is not useful. Fit

statistics, like other RMM diagnostics, must be considered in relation to other information collectively to make such determinations. Figure 4-19 displays the fit statistics of the MHP-PLHIV-AS when analyzed as having one category.

Figure 4-19: *Phase III: Validation Study – Fit Statistics, Reverse Coding the Negative Statements, One Dimension*

ENTRY NUMBER	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	ITEM
24	1.08	1.0	1.97	6.1	COM1
14	1.56	7.6	1.60	8.0	IMP1
15	1.48	6.4	1.52	7.0	DIS3
2	1.27	3.9	1.34	4.7	IND1
9	1.25	3.5	1.33	4.6	DIS2
25	1.21	1.6	.78	-1.1	VIO1
1	1.11	1.7	1.20	2.5	AFF1
5	1.18	1.9	1.08	.6	PUN3
10	1.06	.9	1.11	1.3	ACC1
22	1.04	.7	1.07	1.1	DIS4
13	1.01	.1	.51	2.2	VIO2
6	1.00	.0	1.00	.0	PUN2
11	1.00	.0	.87	-1.5	ALI2
17	.95	-.7	1.00	.0	PUN4
18	.85	-2.4	.96	-.6	DIS5
7	.90	-1.4	.94	-.5	DIS1
23	.94	-.9	.85	-1.8	ALI3
4	.80	-3.2	.85	-2.2	EMP1
3	.80	-3.2	.84	-2.5	PUN1
20	.83	-1.3	.49	2.6	AFF2
16	.80	-3.1	.78	-2.6	PUN6
8	.78	-3.5	.74	3.2	PUN5
12	.78	-3.5	.78	-2.8	ACC2
21	.77	-3.5	.77	-2.5	ALI1
19	.66	-4.5	.53	4.1	PUN7
MEAN	1.01	-.1	1.00	.2	
P.SD	.22	3.1	.34	3.3	

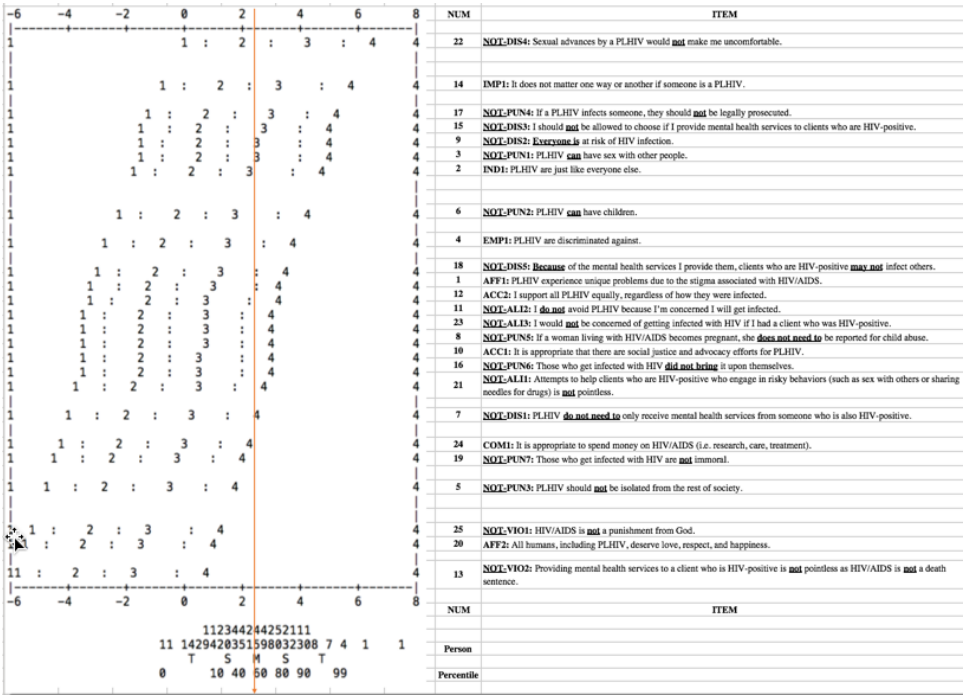
*Elements highlighted are key to considerations of item fit

As seen in Figure 4-19, 10 items of the 25 items (2, 8, 9, 13, 14, 15, 16, 19, 24, & 25) do not fit within acceptable parameters. That means, when run as one dimension, 40% of the items do not support a one-dimension approach to the construct of attitudes towards PLHIV. The final step involved in looking more deeply into the items themselves and the manner in which participants responded to each item.

A RMM output table, known as an expected scores table, details persons' answers in relation to each item of an instrument. This detail indicates the expected scores (Linacre, 2006, 2016). An expected scores table answers the question, "What is the average rating we expect to observe for persons of a particular measure" (Linacre, 2016)?

As a way to help identify the items by the details they provide, Figure 4-20 includes both the expected scores table and the items written out next to their labels. The items are written in a manner which represents what the bottom, less favorable category's recording means.

Figure 4-20: *Phase III: Validation Study – Expected Scores Table, Reverse Coding the Negative Statements, One Dimension*



NUM	ITEM
22	**NOT-DIS4:** Sexual advances by a PLHIV would **not** make me uncomfortable.
14	**IMP1:** It does not matter one way or another if someone is a PLHIV.
17	**NOT-PUN4:** If a PLHIV infects someone, they should **not** be legally prosecuted.
15	**NOT-DIS3:** I should **not** be allowed to choose if I provide mental health services to clients who are HIV-positive.
9	**NOT-DIS2: Everyone is** at risk of HIV infection.
3	**NOT-PUN1:** PLHIV **can** have sex with other people.
2	**IND1:** PLHIV are just like everyone else.
6	**NOT-PUN2:** PLHIV **can** have children.
4	**EMP1:** PLHIV are discriminated against.
18	**NOT-DIS5: Because** of the mental health services I provide them, clients who are HIV-positive **may not** infect others.
1	**AFF1:** PLHIV experience unique problems due to the stigma associated with HIV/AIDS.
12	**ACC2:** I support all PLHIV equally, regardless of how they were infected.
11	**NOT-ALI2:** I **do not** avoid PLHIV because I'm concerned I will get infected.
23	**NOT-ALI3:** I would **not** be concerned of getting infected with HIV if I had a client who was HIV-positive.
8	**NOT-PUN5:** If a woman living with HIV/AIDS becomes pregnant, she **does not need to** be reported for child abuse.
10	**ACC1:** It is appropriate that there are social justice and advocacy efforts for PLHIV.
16	**NOT-PUN6:** Those who get infected with HIV **did not bring** it upon themselves.
21	**NOT-ALI1:** Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is **not** pointless.
7	**NOT-DIS1:** PLHIV **do not need to** only receive mental health services from someone who is also HIV-positive.
24	**COM1:** It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).
19	**NOT-PUN7:** Those who get infected with HIV are **not** immoral.
5	**NOT-PUN3:** PLHIV should **not** be isolated from the rest of society.
25	**NOT-VIO1:** HIV/AIDS is **not** a punishment from God.
20	**AFF2:** All humans, including PLHIV, deserve love, respect, and happiness.
13	**NOT-VIO2:** Providing mental health services to a client who is HIV-positive is **not** pointless as HIV/AIDS is **not** a death sentence.
NUM	ITEM
Person	
Percentile	

The expected scores table displays Item 14 (IMP1) at almost exactly on the mean, indicating participants have a 50/50 probability of answering this as strongly agree or strongly disagree. This is a desired result as the IMP1 item was originally intended to the mean of the items. Other observations also come to light when looking at this table. First, a more favorable, mid, and less favorable range becomes somewhat delineated by the respondents' answers. This delineation is preferred when considering this measure of attitude. However, it would be expected to see the sample scoring higher as a group than in the mid-range considering that this is a sample of mental health professionals. The

expected scores table of the instrument, when used as one dimension of the variable, indicates the sample is not too punishing, is accepting, and does not alienate.

A second observation of note based on the data from Figure 4-17 is that it appears, when looking at the less favorable levels, it was just as difficult for participants to be affirming as it was for them to be not punishing. In other words, it is almost just as difficult to say that "HIV/AIDS is not a punishment from God" as it is to say "All humans, including PLHIV, deserve love, respect, and happiness." Further, it is most difficult to say, "Providing mental health services to a client who is HIV-positive is not pointless as HIV/AIDS is not a death sentence." It is contrary to the assumption that mental health professionals (MHPs) would find it difficult to say all individuals deserve love, respect, and happiness. It would be expected that anyone providing mental health services would have some level of a humanistic view of the world's population. The collective evidence of the instrument, when used in this fashion, runs against the construct theory of a one dimensional instrument of the variable and the assumptions of how persons of this population would score on such an instrument.

4.4.3 Phase III: Validation Study – Hypothesis Two, Summary

The second hypothesis was the instrument utilized in a two dimensional approach. Upon examination of the items themselves, it was revealed that the desired answer was not the only pattern that appeared; another pattern emerged such that the items that grouped together in the first dimension all dealt with societal, collective, social justice and advocacy elements surrounding PLHIV. Further, the items that fell into the second dimension were are all items which related to attitude towards PLHIV being in a closer

proximity to the individual. Consideration of these dimension is represented in Table 4.7:

Table 4.7: *Phase III: Validation Study – Items within Two Dimensions*

Question #	Question Code	Item
		Societal Dimension
1	AFF1	PLHIV experience unique problems due to the stigma associated with HIV/AIDS.
2	IND1	PLHIV are just like everyone else.
4	EMP1	PLHIV are discriminated against.
10	ACC1	It is appropriate that there are social justice and advocacy efforts for PLHIV.
12	ACC2	I support all PLHIV equally, regardless of how they were infected.
14	IMP1	It does not matter one way or another if someone is a PLHIV.
20	AFF2	All humans, including PLHIV, deserve love, respect, and happiness.
24	COM1	It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).
		Personal Dimension (*reflected here as their reverse coded versions)
3	PUN1	PLHIV can have sex with other people.
5	PUN3	PLHIV should not be isolated from the rest of society.
6	PUN2	PLHIV can have children.
7	DIS1	PLHIV do not need to only receive mental health services from someone who is also HIV-positive.
8	PUN5	If a woman living with HIV/AIDS becomes pregnant, she does not need to be reported for child abuse.
9	DIS2	Everyone is at risk of HIV infection.
11	ALI2	I do not avoid PLHIV because I'm concerned I will get infected.
13	VIO2	Providing mental health services to a client who is HIV-positive is not pointless as HIV/AIDS is not a death sentence.
15	DIS3	I should not be allowed to choose if I provide mental health services to clients who are HIV-positive.
16	PUN6	Those who get infected with HIV did not bring it upon themselves.
17	PUN4	If a PLHIV infects someone, they should not be legally prosecuted.
18	DIS5	Because of the mental health services I provide them, clients

		who are HIV-positive may not still infect others.
19	PUN7	Those who get infected with HIV are not immoral.
21	ALI1	Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is not pointless.
22	DIS4	Sexual advances by a PLHIV would not make me uncomfortable.
23	ALI3	I would not be concerned of getting infected with HIV if I had a client who was HIV-positive.
25	VIO1	HIV/AIDS is not a punishment from God.

When categories are considered by their themes, it becomes clear that the items which originally had negative point-biserial correlations (both in the pilot study and the validation study; items 1, 2, 4, 10, 12, 20, and 24), all have a desired answered of strongly agree and all group together along with the IMP1 item (Item 14) in the first dimension, are all questions relating to *societal* issues of HIV/AIDS. They represent the things which have a physical distance *away* from any given participant. The reverse is true for the items that grouped together in the second dimension, as they all have items relating to issues that could be more *personal* or *closer* proximity to any given participant. These items were recoded to account for a higher score meaning a more favorable attitude. As such, the original items (see Appendix F) are reworded in Table 4.6 to impart the intended meaning behind a "reverse" answer. For example, "HIV/AIDS is a punishment from God" (Item 25, VIO1), becomes "HIV/AIDS is *not* a punishment from God" (see Table 4.7).

Item PUN3 (Item 5), may imply a societal item as it has the term "society" in the statement when it states "PLHIV should *not* be isolated from the rest of society." Care should be taken with this interpretation; although the word "society" is in the statement, the meaning behind the statement is relative to a personal level – it speaks to what extent an individual desire to have someone who is HIV-positive kept at a "safe distance" from

the individual answering the question. Therefore, this item's meaning is one of a personal level.

When the Content Evaluation Panel (CEP) set about constructing the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS), they were attuned to how such a scale needed to investigate attitudes ranging from the personal to societal levels. They did not, at any time, intend for there to be two distinct dimensions of the construct; nor did they intend for all the preferred answers of strongly agree to fall within the same dimension, and the strongly disagree preferred answer items be in a different dimension. The societal dimension encompasses items which both (a) fall at the more favorable level of the scale, and (b) have a desired answer of strongly agree. The personal dimension all (a) fall into the less favorable level, and (b) have a desired answer of strongly disagree. As a consequence, this second consideration of investigating two dimensions was explored further. This type of grouping speaks partially to the quantitative nature of the data analyses, but also speaks qualitatively given the CEPs desire to have societal and personal items on the MHP-PLHIV-AS. The Rasch Measurement Model takes both the quantitative and qualitative pieces of the data into consideration (Bond & Fox, 2015; Linacre, 2016; Rasch, 1960, 1980).

4.4.4 Phase III: Validation Study – Hypothesis Two, Diagnostics

Point-biserial correlations, Rasch factor analysis, and variable map diagnostics were run on the two dimensions, societal and personal, and considered as two dimensions of the same variable. As with each previous analyses, the targets were set at finding all positive point-biserial correlations, dimensionality as gauged by ≥50% variance level,

≤10% first contrasting variance, and < 2.0 eigenvalue. Rating scale category probability was kept at .5 (50%) for each category. Table 4.8 represents the point-biserial correlations. Figures 4-21 and 4-22 present the dimensionality maps of the two categories. Figure 4-23 provides the variable maps of the two categories. Finally, Figure 4-24 specifies the rating scale probability graphs of the two categories.

Table 4.8: *Phase III: Validation Study – Point-Biserial Correlations, Two Dimensions (Societal and Personal) Run Separately*

Question #	Question Code	Statement	Pt. Biserial Correlation
		Societal Dimension	
1	AFF1	+	0.44
2	IND1	+	0.61
4	EMP1	+	0.56
10	ACC1	+	0.52
12	ACC2	+	0.58
14	IMP1	+	0.59
20	AFF2	+	0.36
24	COM1	+	0.45
		Personal Dimension	
3	PUN1	+ (Not -)	0.58
5	PUN3	+ (Not -)	0.40
6	PUN2	+ (Not -)	0.58
7	DIS1	+ (Not -)	0.43
8	PUN5	+ (Not -)	0.60
9	DIS2	+ (Not -)	0.46
11	ALI2	+ (Not -)	0.56
13	VIO2	+ (Not -)	0.37
15	DIS3	+ (Not -)	0.54
16	PUN6	+ (Not -)	0.52
17	PUN4	+ (Not -)	0.46
18	DIS5	+ (Not -)	0.48
19	PUN7	+ (Not -)	0.58
21	ALI1	+ (Not -)	0.51
22	DIS4	+ (Not -)	0.55
23	ALI3	+ (Not -)	0.56
25	VIO1	+ (Not -)	0.37

Figure 4-21: *Phase III: Validation Study – Dimensionality Map, Societal Dimension*

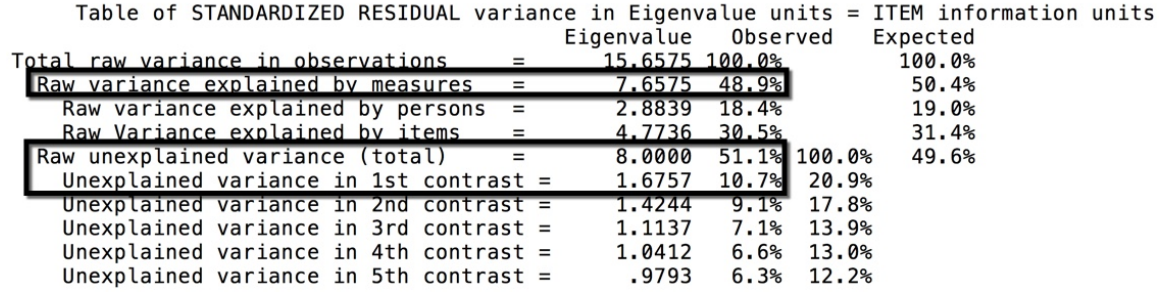


Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	15.6575	100.0%		100.0%
Raw variance explained by measures =	7.6575	48.9%		50.4%
Raw variance explained by persons =	2.8839	18.4%		19.0%
Raw Variance explained by items =	4.7736	30.5%		31.4%
Raw unexplained variance (total) =	8.0000	51.1%	100.0%	49.6%
Unexplained variance in 1st contrast =	1.6757	10.7%	20.9%	
Unexplained variance in 2nd contrast =	1.4244	9.1%	17.8%	
Unexplained variance in 3rd contrast =	1.1137	7.1%	13.9%	
Unexplained variance in 4th contrast =	1.0412	6.6%	13.0%	
Unexplained variance in 5th contrast =	.9793	6.3%	12.2%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-22: *Phase III: Validation Study – Dimensionality Map, Personal Dimension*

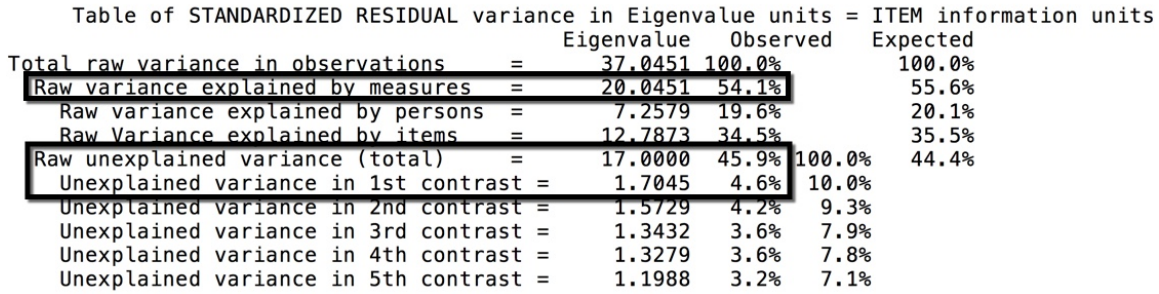


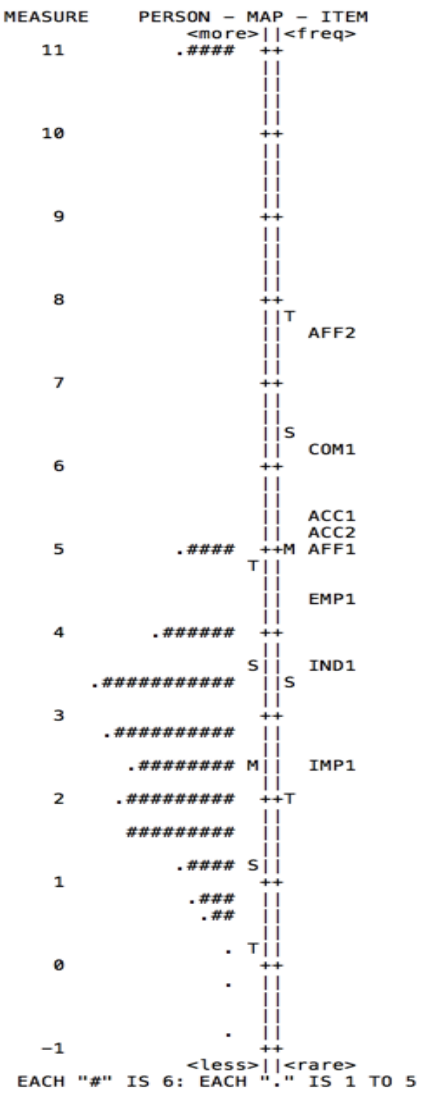
Table of STANDARDIZED RESIDUAL variance in Eigenvalue units = ITEM information units

	Eigenvalue	Observed		Expected
Total raw variance in observations =	37.0451	100.0%		100.0%
Raw variance explained by measures =	20.0451	54.1%		55.6%
Raw variance explained by persons =	7.2579	19.6%		20.1%
Raw Variance explained by items =	12.7873	34.5%		35.5%
Raw unexplained variance (total) =	17.0000	45.9%	100.0%	44.4%
Unexplained variance in 1st contrast =	1.7045	4.6%	10.0%	
Unexplained variance in 2nd contrast =	1.5729	4.2%	9.3%	
Unexplained variance in 3rd contrast =	1.3432	3.6%	7.9%	
Unexplained variance in 4th contrast =	1.3279	3.6%	7.8%	
Unexplained variance in 5th contrast =	1.1988	3.2%	7.1%	

*Elements highlighted are key to considerations of unidimensionality

Figure 4-23: *Phase III: Validation Study – Variable Maps, Two Dimensions (Societal and Personal) Run Separately*

Societal Dimension



Personal Dimension

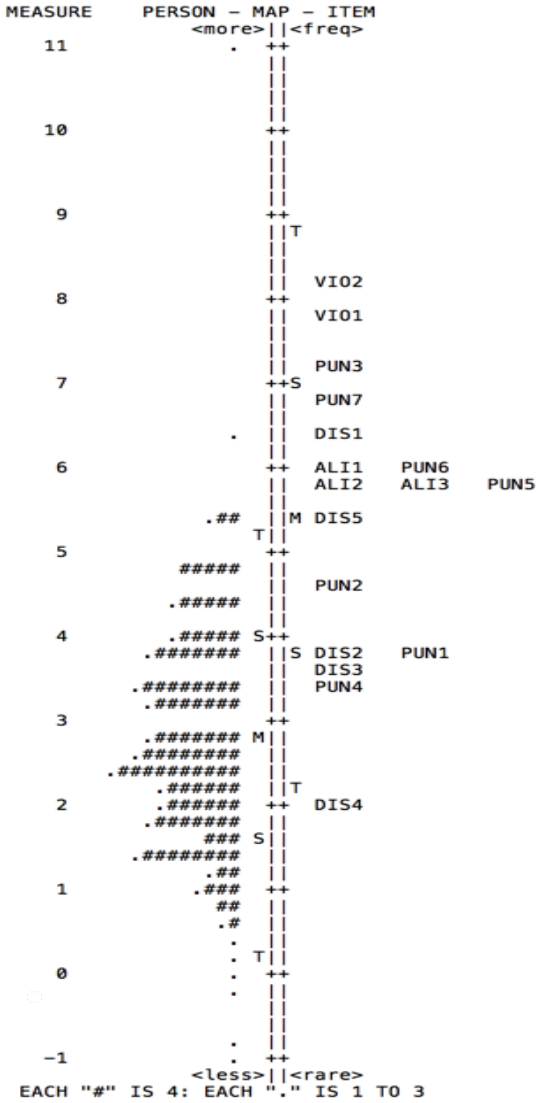
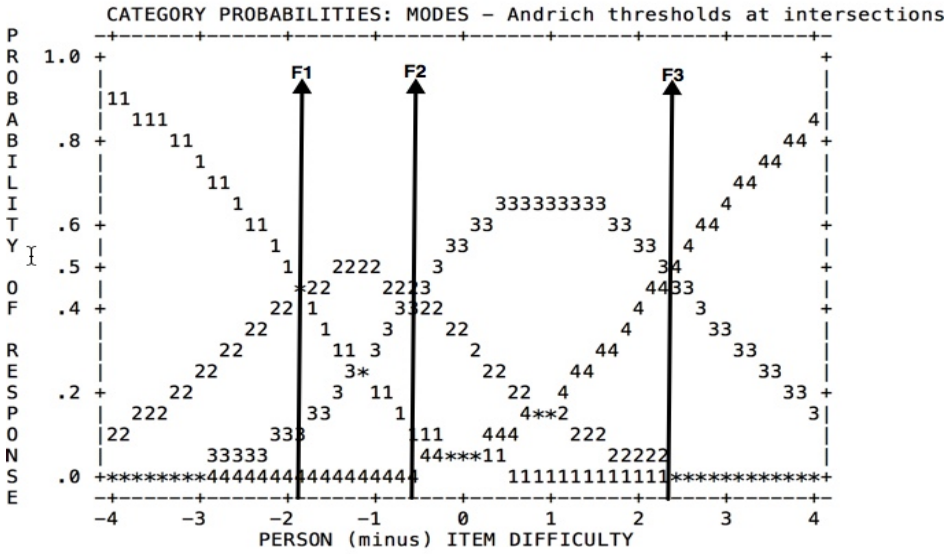
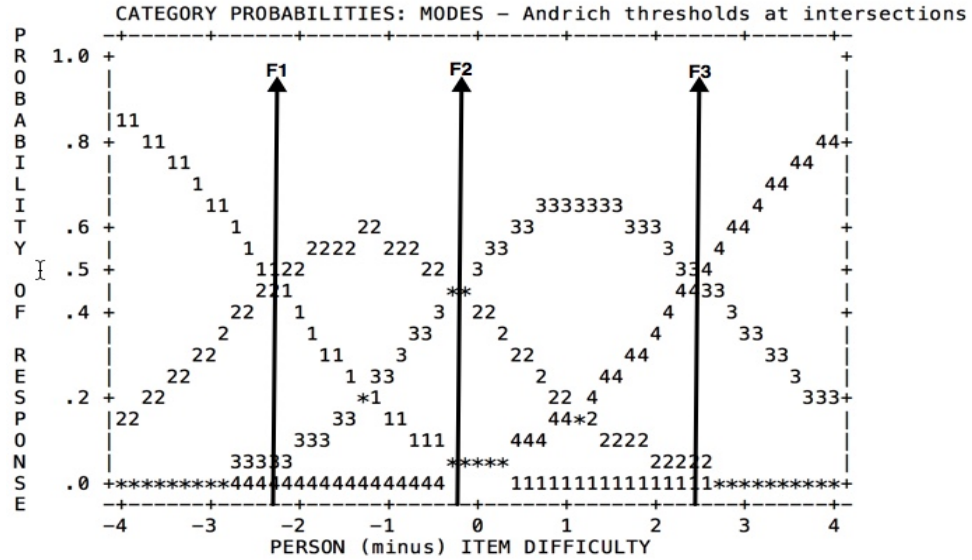


Figure 4-24: *Phase III: Validation Study – Rating Scale Probabilities, Two Dimensions (Societal and Personal) Run Separately*

Societal Dimension



Personal Dimension



The rating scale probability graphs demonstrate good use of a use of the four rating category options ("1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree"). This is evidenced by each variable dimension (societal and personal) having appropriate rating scale category levels of .5 (50%) or above probability and enough distance between each rating scale category threshold. This means the participants utilized the four-option rating scale categories, in turn meaning the rating scale should be kept as it is with the four options ranging from "1 = Strongly Disagree" to "4 = Strongly Agree).

Further results indicated that both dimensions (societal and personal) relate to the one variable of attitude towards PLHIV. The items within the societal dimension all have positive point-biserial correlations, indicating that they have good category reliability. The variable map for this dimension (Figure 4-22) shows items as a continuum that spans in a linear fashion from affirming to impartial, with the mean of items being around the accepting level, and the mean of the participants at the impartial level. The societal dimension has a 48.90% variance level, meaning that it is 1.10% below the desired 50% cut-off. It has a first unexplained contrast of 10.70%, which is .70% above the desired cut-off, but the eigenvalue is at an acceptable 1.67. Combined, these dimensionality results indicate caution at this time for this dimension. The argument could be made that the category has an acceptable level of unidimensionaltity as it is almost within the parameters of the parameters set for this study, and had the parameters been set differently the category would qualify for unidimensionality. Further research on these items and dimensions is warranted, however, because it is not quite clear there is enough data from this particular sample to say too much about this category's dimensionality.

The personal dimension's items also all have positive point-biserial figures, denoting they are reliable for this dimension. The personal dimension's map shows a range of attitude from violent to dismissive, with the average of participants falling in the dismissive range. Given that the high portion of this range relates to negative attitudes, being dismissive would be a preferred mean for a sample of mental health professionals. After all, while dismissive may not be the preferred response from such individuals, it is certainly a more favorable level of attitude than being violent toward PLHIV.

The dimensionality for the personal dimension is at 54.1%, the first unexplained contrast is at 4.60%, and the eigenvalue was 1.7. As such, all elements of dimensionality consideration are falling within the study's parameters, which indicates an acceptable level of unidimensionality for the dimension. As with the exploration of hypothesis one above, item fit statistics and expected scores tables were generated for the two dimensions of societal and personal, as part of the analyses investigating hypothesis two (two categories of the one variable). The item fit diagnostics are shown in Figures 4-25 and 4-26.

Figure 4-25: *Phase III: Validation Study – Fit Statistics, Societal Dimension*

ENTRY NUMBER	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	ITEM
6	1.25	3.6	1.29	4.1	IMP1
1	1.10	1.5	1.16	1.9	AFF1
2	1.09	1.2	1.11	1.5	IND1
4	1.07	1.0	1.02	.2	ACC1
8	1.07	1.0	1.01	.2	COM1
3	.75	-3.8	.87	-1.8	EMP1
7	.84	-1.3	.55	-2.0	AFF2
5	.81	-2.8	.81	-2.4	ACC2
MEAN	1.00	.0	.98	.2	
P.SD	.16	2.3	.22	2.1	

*Elements highlighted are key to considerations of item fit

Figure 4-26: *Phase III: Validation Study – Fit Statistics, Personal Dimension*

ENTRY NUMBER	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	ITEM
9	1.59	7.7	1.60	7.9	DIS3
6	1.29	4.1	1.32	4.6	DIS2
17	1.20	1.6	.75	-1.0	VIO1
2	1.19	2.0	1.19	1.1	PUN3
15	1.13	2.1	1.15	2.3	DIS4
7	1.03	.5	.89	-1.2	ALI2
11	1.01	.1	1.03	.5	PUN4
4	.94	-.9	1.02	.2	DIS1
8	1.02	.2	.46	-2.1	VIO2
12	.89	-1.6	1.02	.3	DIS5
3	1.01	.2	1.01	.1	PUN2
16	.96	-.5	.86	-1.6	ALI3
1	.84	-2.5	.87	-2.1	PUN1
10	.84	-2.4	.85	-1.6	PUN6
14	.81	-2.8	.81	-1.9	ALI1
5	.76	-3.8	.70	-3.5	PUN5
13	.66	-4.6	.51	-3.8	PUN7
MEAN	1.01	.0	.94	-.1	
P.SD	.22	2.9	.27	2.8	

*Elements highlighted are key to considerations of item fit

The established parameters for in- and out-fit mean squared levels was set at .75 – 1.3. The societal dimension has one item with an outfit for the category; the personal dimension has five items outside the desired level. The societal item, AFF2 (Item 7), is also the item which seems difficult for participants to endorse (note the item's level on the variable map in Figure 4-23). This item could be an outfit item and need to be removed because it is too difficult for participants to endorse; or it could be reworded in a manner that achieves the dual purpose of keeping the CEP's intended meaning intact and being easier for participants to endorse. The personal dimension's five items that fall outside mean squared levels could also be considered for removal or re-working. The DIS3 item (Item 9), for example, could possibly be removed and the dimension still function properly because the DIS2 and PUN1 items (Items 6 and 1 respectively) fall in similar fashion along the variable map (Figure 4-23). The DIS3 item then may not be needed as the other two items get to the same information. Further, the VIO2 item (Item

8) is similar to this dimension as the AFF2 item is to the societal dimension. The VIO2 item is an outlier to the items and difficult for participants to endorse in the same way they do the other items. Consequently, it may be that the VIO2 could need to be removed or reworded. The same considerations should be given to the PUN5 (Item 5) and PUN7 (Item 13) items which either fall close to or exactly the same as other items.

In summary, four items with fit statistics that fall outside of established preferred cut-off. This does not, however, make the personal dimension fail. This becomes clear when considering evidence of these dimensions through other diagnostics (i.e., acceptable levels of unidimensionality, all items reliable in relation to the dimension, and a linear continuum of the items as a measurement). After all, four out of 17 items represent only 2% of the personal dimension's items. The fit statistics suggest, however, that further consideration of these items is warranted to potentially enhance the scale. Closer examination of the expected scores table is also needed. The results of this additional examination are displayed n Figure 4-26.

Figure 4-27: *Phase III: Validation Study – Expected Scores Table, Two Dimensions (Societal and Personal) Run Separately*

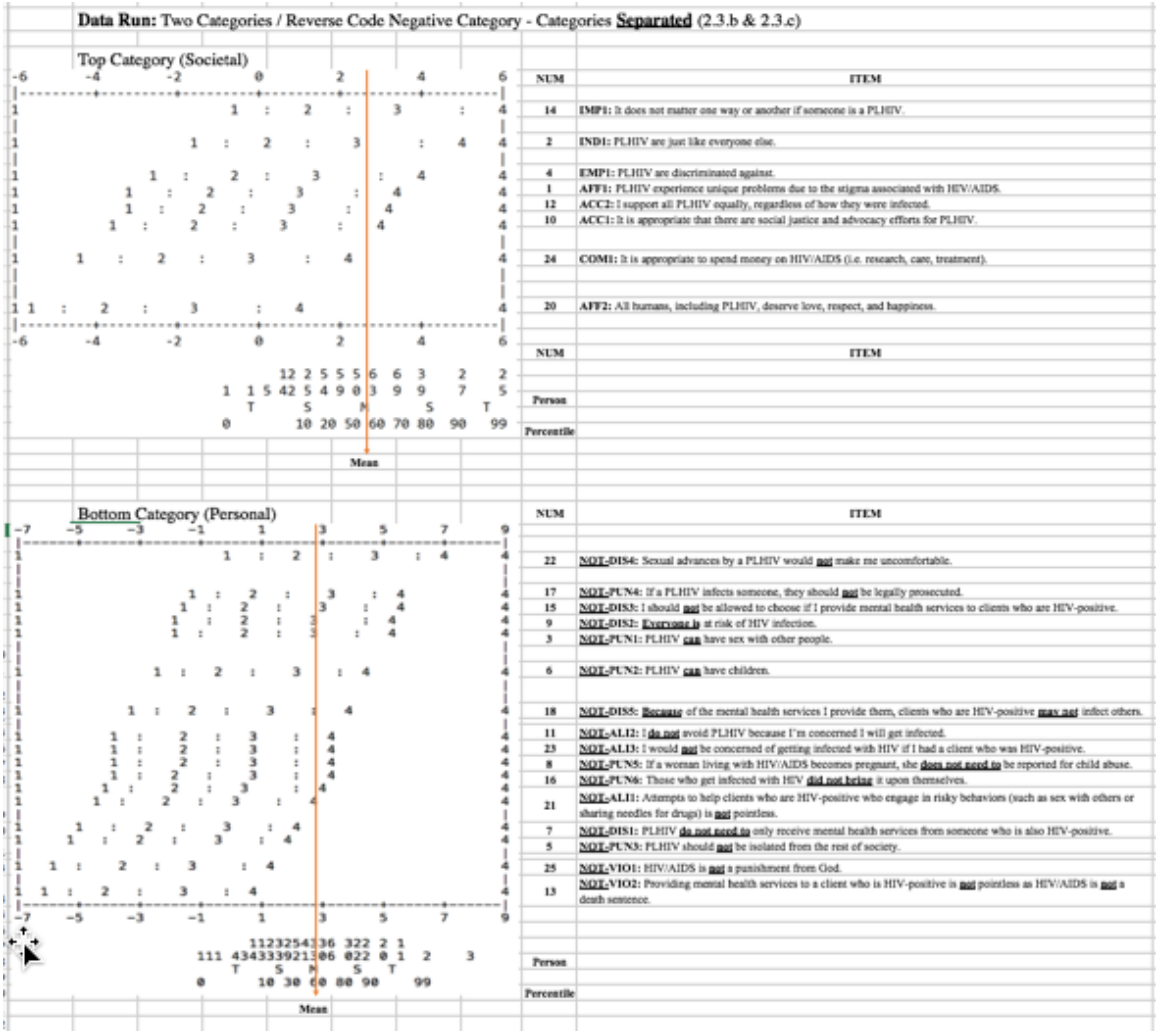


Figure 4-27 displays how the sample can be expected to score in the societal category and personal dimensions separately. By separating into dimensions, items are no longer intermixed causing unclear or un-useful interpretation. Items relating to the personal dimension, for example, can be reviewed by what the sample can be expected to answer centered around the mean of items relating to the personal dimension. The same can be said about the societal dimension. Such separation affords for review of the category information separately, as well as how they relate to the overall instrument.

After considering the two hypotheses about how the scale should be utilized, it is important to note is it is only when societal and personal dimensions are separated that more detailed and meaningful information can be gathered about the sample's attitude towards PLHIV, and what the sample who completes it is telling the researchers. The focus of the current study is on the development and validation of the instrument as a whole, however, and thus results here are intended to remain focused on that original intent.

4.5 Phase III: Validation Study – Manner to Utilize the MHP-PLHIV-AS

Final analyses investigated two final hypotheses for considering how the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS) functions. The first hypothesis was that the MHP-PLHIV-AS's functioned as one dimension. The second hypothesis was that the MHP-PLHIV-AS has two dimensions, one which measures societal considerations and the other which measures personal considerations. A summary of the diagnostics and an interpretation of the two hypotheses follows.

The analysis of information for the first hypothesis, of one dimension for the scale, produced a linear scale with all items having positive point-biserial correlations, and the ability to detail meaning of the respondent's answering. Response rating scale categories were useful with the four-option approach of "1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree." The one-dimension approach had lower unidimensionality than desired and ended up with 20% of the items that misfit. Further, it suggested a measurement contrary to theory, and suggested a population with less

favorable attitudes which is contrary to the assumption (and descriptive statistics) of more favorable attitudes.

The second hypothesis, of two dimensions for the scale, was examined in the same manner. Response rating scale categories were useful with the four-option approach of "1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree." Further results produced a linear scale with all items having positive point-biserial correlations. The personal dimension demonstrated strong unidimensionality; the societal dimension demonstrated good unidimensionality, but there is room for exploring ways to enhance that to a stronger amount. The societal dimension has one item with an outfit item. This outfit item could be adjusted accordingly with further study. The personal dimension has four items (2%) with various infit and outfit items, all of which could be adjusted accordingly with further study. Finally, when the two-dimensions of the single scale are separated, significantly more information is gleaned, and meaning understood, by what the participants are saying about their attitude towards PLHIV.

Cumulatively, when the quantitative data of the measurement is combined with the qualitative intent by the CEP, the first hypothesis is not supported. The instrument is not appropriate when its items are placed into one dimension. The second hypothesis, however, is well supported that the MHP-PLHIV-AS is one scale which measures attitude towards PLHIV that have both societal and personal dimensions.

These two dimensions can be measured with the one instrument. In fact, *both must be measured* in order to measure the breadth of the variable, and to gain richer and more meaningful information of the attitude towards PLHIV construct. Conclusions drawn from the data (i.e., validity) should come from looking at the dual-dimensional

nature of the overall construct. The data here suggests that attitude towards PLHIV can be different depending on the proximity to the individual. The variable has, in a manner of speaking, a relational aspect to it. There is a personal dimension and a societal dimension, and in order to understand attitude towards PLHIV, both dimensions must be considered.

4.6 Answering the Research Questions

1. **To what extent do the participants use the MHP-HAAS rating scale categories as intended?**

    - The participants used the rating scale categories well and as predicted. The rating scale was established as: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree. This rating scale was reversed for the personal dimension items to reflect how a higher score ("4") reflected a more positive attitude ("Strongly Disagree"). As displayed in Figure 4-24, each dimension was utilized fully for both societal dimension items, and personal dimension items. Participants were more likely to strongly agree or strongly disagree with items than they were to use an agree or disagree option. However, all rating scale categories were utilized and do not need to be collapsed into a smaller rating scale.

2. **How well do the items separate participants into statistically distinct and meaningful levels?**

    - The items separate into two statistically distinct and meaningful dimensions. The societal dimension represents items which are those which are considered by the participants to be at a more society-level. The

personal dimension represents items which are in closer proximity to the participants. The variable maps (Figure 4-23) and expected scores tables (Figure 4-24) provide visual representation of the two dimensions and how the sample performed within each dimension. These two dimensions are required in order to better define the participants into statistically distinct and meaningful levels. This study ultimately did not answer this question; however, it provides the basis for further research in order to determine it. Explanation and discussion on how to answer this question is addressed in Chapter 5.

3. **To what extent do the items form a reliable (stable) line of inquiry (ruler)?**
   - The items provide a good, reliable line of inquiry when they are examined as two dimensions (societal and personal) of the same attitude towards PLHIV construct. Both dimensions are required and should be evaluated separately, but interpreted together in context of the scale as a whole.
4. **To what extent is the MHP-PLHIV-AS measuring a unidimensional construct (attitudes towards PLHIV)?**
   - The MHP-PLHIV-AS provides evidence to support a two dimensional approach to the construct. The variance for the personal dimension is at 54.1%, the first unexplained contrast is at 4.60%, and the eigenvalue was 1.7. Therefore, all elements of dimensionality are within the study's parameters. This indicates a good level of unidimensionality for the personal dimension. The societal dimension has a 48.90% variance level,

meaning that it is 1.10% below the study's desired 50% cut-off. It has a first unexplained contrast of 10.70%, which is .70% above the desired cut-off, but the eigenvalue is at an acceptable 1.67. Combined these results for the societal dimension suggest caution on dimensionality at this time. Investigation should turn to ways to enhance the societal dimension's unidimensionality.

5. **Is the item ordering of the MHP-HAAS meaningful?**

   - In consideration of difficulty for participants to answer, the ordering of the items is not meaningful. The Content Evaluation Panel (CEP) did not seek an instrument which increased in difficulty as the items on the scale increased. Item order is meaningful, however, when considering the final results of societal and personal dimensions. The items do not align in level of favor as predicted by the CEP. Exploration of how and why this might be, and suggestions for future research, are detailed in Chapter 5.

Chapter Five

Discussion

5.1 Overview

The previous chapter detailed four, successive steps of this study's data diagnostics and analyses. The results of such led to two compelling and competing hypotheses. The first was that the Mental Health Professionals' Attitude Towards PLHIV Scale (MHP-PLHIV-AS) was measuring the construct of attitude towards people living with HIV and/or AIDS (PLHIV) as one dimension. The evidence failed to support this first hypothesis.

The second hypothesis was that the construct of attitude towards PLHIV was two dimensions of the same variable. Evidence from the data of the MHP-PLHIV-AS use with a sample of mental health professionals (MHPs) supported this hypothesis. Two dimensions, societal and personal, were found to relate to the measuring of the variable. It was further demonstrated how both dimensions were required to understand the variable as a whole. Conceptualization of this attitude has been found appropriately identified as ranging from "less favorable" to "more favorable." Additionally, a Likert rating scale for answer categories ranging from "1 = Strongly Disagree" to "4 = Strongly

Agree" has been found as a useful manner in which to answer statements regarding attitudes towards PLHIV.

The discussion now turns to the consideration of the implications, the impact, and further research considerations regarding use of the MHP-PLHIV-AS, as well as for the overall construct of attitude. First, however, final contemplations of the study's results will be detailed. Implications regarding the data results will be reviewed relative to the individual categories, the instrument as a whole, and the overall levels of favor.

5.2 The Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)

5.2.1 The MHP-PLHIV-AS: Considerations of Societal Dimension

The variance percent for the MHP-PLHIV-AS was set at ≥50%, meaning it could be said that at least half of the variance was known to be relative to the construct under study. The first contrasting variance was set at ≤10%, meaning the first unknown variance construct should not exceed 10%. The eigenvalue for the first unknown contrast was set at <2.0, so that no more than the equivalent amount of two questions accounted for variance.

Looking first at the societal dimension, there is opportunity to strengthen the unidimensionality of the dimension. For one, as demonstrated in Chapter 4, the AFF2 item (Item 7) which states, "All humans, including PLHIV, deserve love, respect, and happiness," is an outlier for this dimension (outfit mean-square is .55, which is below the .75 cut off; see Figure 4-25). These results suggest that mental health professionals (MHPs) have other factors to consider when looking at this item than just PLHIV. It could mean that MHPs have too many affectional elements (love, respect, and happiness)

to consider within a single item. The Content Evaluation Panel (CEP) should reconvene and address these considerations. Perhaps the item should be multiple where they state, "PLHIV deserve happiness;" and/or "PLHIV deserve love and respect;" or some other manner of delineating the elements currently used collectively. It could be the case that something else altogether which causes the AFF2 item (Item 7) to be an outlier for the dimension. The conclusion remains that the item misfits and needs to be reassessed by the CEP and adjusted to fit more appropriately within the dimension.

Another area of the results which causes concern for the unidimensionality of the dimension are the dimensionality diagnostics, which are shown in Figure 4-20. The societal dimension had an eigenvalue of 1.6, strongly suggesting that the dimension did not have another subcategory within it. However, the overall variance was 48.90% (1.1% below the preferred level), and a first contrast of 10.70% (.7% over the preferred level). Having figures this close to the cut-off marks for the study mean that the dimension is working as an element which measures attitude towards PLHIV, yet the dimension chould be strengthened. There are a couple of options which may provide such increased power to the unidimensional nature of the dimension. Addressing the aforementioned AFF2 item (Item 7) could help. Adding more items that measure this category could also help. The societal category has less items (8 items) than the personal category (17 items). Increasing the overall number of items for this dimension could provide better strength to measuring the category as more items would equate to more utility in the overall dimension continuum.

Another recommendation that should be considered is to re-label the societal dimension levels. It may be more appropriate to label the items in relation to the

dimension and the distance they imply from the individual of interest. The dimension could be viewed, for example, as level labels of "Societal Level 1 to Societal Level 5," or some other "highest" and "lowest" levels as appropriate for the category. This would relate to how the original levels intended by the CEP, such as "affirming" or "dismissive," were intended. Further discussion on this will be detailed when considering the instrument as a whole, but first the personal dimension's results need to be attended.

5.2.2 The MHP-HAAS: Considerations of Personal Category

In the personal dimension, Figure 4-26 makes clear that five items were misfitting for the dimension, because their mean-squares were outside the preferred level of .75 – 1.3. This means these 5 items (Items 5, 6, 8, 9, and 13) from the category's total 17 items (2%) should be addressed for better dimension inclusion (see Figure 4-26 for the dimension items' fit statistics). As with the AFF2 item (Item 7) in the societal dimension, the five items misfitting in the personal dimension (Items 5, 6, 8, 9, and 13) could be reworded to make a better fit. Item 9 (DIS2), for example, in its reverse-coded meaning state (i.e., after recoding it to where a "4" was the best preferred answer) says, "Everyone is at risk of HIV infection." Perhaps the item is confusing respondents. It might tie into a knowledge element of HIV-infection which impacts how participants answer. For instance, some participants may answer based on their assumptions that only individuals exposed to infected bodily fluids are at risk. Again, it is unclear at this time why the DIS2, Item 9, misfits in this dimension. Regardless of the reason, the item in relation with the other dimension's items should be addressed to reduce the number of misfitting items within the dimension.

Another consideration for improving the personal dimension would be to address items which overlap each other on the same levels of the dimension. For example, consider Figure 4-23, and the right side of the graphic which represents the variable map for the personal category. ALI1 (Item 21), PUN6 (Item 16), ALI2 (Item 11), ALI3 (Item 23), and PUN 5 (Item 8) all fall at the same level of easiness for participants to answer. There may be ways to reword some of the items in a manner which increases their easy-to-answer/difficult-to-answer spread along the variable.

Finally, as with recommendation for the societal dimension, consideration should be given to re-labeling the levels within the dimension. Given the dimension speaks to a personal closeness of HIV/AIDS or PLHIV, the levels may be more appropriately labeled as "Personal Level 1 to Personal Level 7" instead of in terms of "violent" or "alienating." As with the societal dimension, the personal level numbers used here are for example purposes only. They could be 0 to 10, 1 to 3, or any number of possibilities. Further scrutiny and consideration by the CEP would be required to determine the appropriate levels within each dimension, as well as for the MHP-PLHIV-AS as a whole when the two dimensions are used collectively.

5.2.3 The MHP-PLHIV-AS: Considerations of Entire Scale

When separated into the two dimensions of societal and personal, and individual items are considered within the context of their dimension, more meaningful interpretations can be seen regarding the overall attitude towards PLHIV construct. Consider, for instance, Figure 4-27 which displays the expected scores table with the societal and personal dimensions separated. The research lacks an explanation for why this sample found it difficult to answer "not violent" towards PLHIV. Further, it is not

clear why the sample had difficulty with affirming. These are the two items, AFF2 (Item 20) and VIO2 (Item 13) which demonstrate lower fit (see Figures 4-25 and 4-26).

Other curiosities also arise, such as the "not dismissive" item (Item 15), "I should not be allowed to choose if I provide mental health services to clients who are HIV-positive." The majority of the respondents answered in a manner below the mean for this item. Here again, the item is one which fit poorly for the dimension (Figure 4-27). These results suggest the sample thinks they should be allowed to choose to not work with PLHIV. That is a concern when, as noted in Chapters 1 and 2, all such providers will likely work with such a client at some point or another (Carney, Werth, & Emmanuelson, 1994; Rose, Osborne, Hairston, Laux, & Pawelczak, 2015). Indeed, this sample's descriptive statistics indicate that 52% (236 of the 454 participants) have *already* had such a client.

Another concern comes from the societal dimension. Specifically, one item states, "It is appropriate to spend money on HIV/AIDS (i.e., research, care, and treatment)." The entire sample scored below the mean for this dimension. When one considers this dimension as a whole and this item within that dimension, it suggests the participants feel there is discrimination against PLHIV, unique challenges for PLHIV, and something should be done at the social justice level; yet they do not think that should include a financial component to such advocacy efforts. Such interpretations provide a wealth of opportunity for future research.

5.2.4 The MHP-PLHIV-AS: Considerations of Attitude Levels

Originally, the Content Evaluation Panel (CEP), devised an instrument which they thought would measure attitudes towards HIV/AIDS in a linear, one-dimension fashion.

Their intended levels, ranging from less favorable to more favorable, was (in descending order):

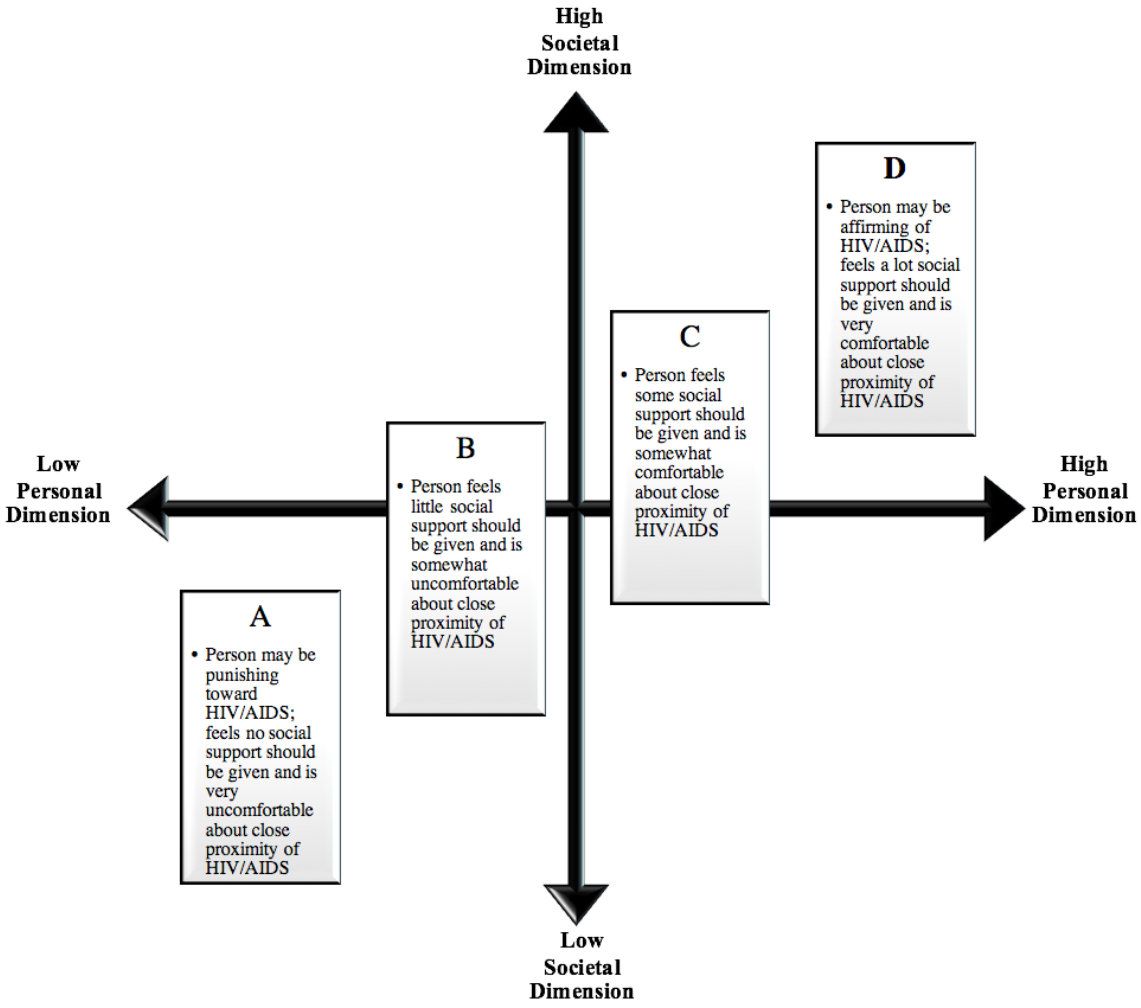
- Affirming (AFF)
- Accepting (ACC)
- Empathetic (EMP)
- Impartial (IMP)
- Indifference (IND)
- Dismissive (DIS)
- Alienating (ALI)
- Punishing (PUN)
- Violent (VIO)

As has been discussed, the MHP-PLHIV-AS is not functioning in this manner. Instead, societal and personal dimensions have been identified as containing the items which measure the attitude of investigation. When analyzed separately, as they should be, the dimensions contain within them their own set of varying levels. Thus, the construct levels do not lend themselves well to the original affirming to violent structure.

In order to determine an individual's "level of favor" in attitude towards PLHIV, a score on the societal dimension must be combined with a score on the personal dimension. These scores together provide an overall attitude level. If the dimension labels are redefined to represent their individual dimensional structure in relation to how a person scores (as suggested in the previous two sections), then the combined scores could be used in tandem to create a profile of an individual's attitude toward PLHIV. Those profile levels could be labeled with the original labels intended by the CEP. Such

a potential profile matrix is suggested in Figure 5-1 (with only four of many possible profile points noted).

Figure 5-1: *MHP-PLHIV-AS Profile Matrix*



Thereby a matrix could be established where statistical cut offs within each dimension could be defined to demark the dimensional levels. When those levels are combined, then an overall attitude could be labeled based on level (as depicted in Figure 5-1). For example, if Counselor Why had a Societal Level 3, and a Personal Level 5, then they might be considered to be Empathetic towards PLHIV. These figures are purely hypothetical to make the point of combining the dimensional scores. Further

research on enhancing the dimensions is required, as is determining the statistical cut off points for levels of attitude to be assigned based on statistical significance. The original levels the CEP intended is still possible; it just requires the use of two scores to draw the conclusion of an overall attitude level and consequent label. This could, and in fact should, be done with the MHP-PLHIV-AS so it can be utilized effectively in real-world application in determining MHPs' attitude towards PLHIV.

5.2.5 The MHP-HAAS: Implications of Two Dimensions for One Attitude

The MHP-HAAS measures both a societal dimension and personal dimension to identify a single, overarching attitude towards PLHIV. The two-dimension approach to attitude measurement harkens back to the discussion in Chapter 2 which considered the issue of if attitude was two dimensions of personal versus professional. Although it is not the case that personal and professional attitudes are two different dimensions (Hammer, 2000), it is true that how such attitude is expressed may differ between personal and professional environments (Hammer, 2000; Ratts, Singh, Nassar-McMillan, Butler, & McCough, 2015). The results of this study provide evidence that the idea of two elements to attitude is accurate, only that it is two dimensions (societal and personal) of one construct (attitude), not two differing dimensions of attitude (personal and professional). There seems to be almost a logical, perhaps innate, understanding of such a notion.

Based upon a similar idea of proximity influencing behavior and interaction, psychologist Bronfenbrenner (1979) created the ecological systems theory, or human ecology theory. Bronfenbrenner's theory suggests that there are five environmental systems which influence the behavior (and possibly attitude) of an individual toward a

target object. Represented by a set of concentric circles spanning outward from the individual, Bronfenbrenner suggested individual's may react differently to a target based on the environment in which it is encountered. Something closer to the individual, for example, may have one reaction which is in keeping with the individual's familial views; whereas in the general public the individual may act differently to conform to societal views. The five systems Bronfenbrenner recommended span outward from the individual in the following order:

1. Microsystem – an environment where an individual is an immediate, active participant (e.g., family, close friends);
2. Mesosystem – an environment where the individual experiences interactions between their various microsystems (e.g., when friends and family are both present);
3. Exosystem – an environment where the individual makes connections between differing social settings, yet the individual may not have a specific, active role in the interaction (e.g., being a student on a university campus);
4. Macrosystem – an environment where an individual is with others of their primary culture (e.g., with others of similar socioeconomic status); and
5. Chronosystem – environmental and lifespan development changes over the course of the individual's life.

The findings of this study are in line with the human ecology theory when considering the attitude construct. Consider a mental health professional we will call Counselor Zee. Counselor Zee believes that there is stigma surrounding HIV/AIDS, judges that PLHIV have unique needs that other demographics could not understand, and feels that PLHIV are just like everyone else. But when Zee considers having a client who

is HIV-positive, Zee's attitude, in a manner of speaking, alters slightly. Zee is not sure how to feel about having a PLHIV being in the office for a psychotherapy session; after all, Zee fears no matter how remote the odds, infection might be possible. When Zee thinks about it, Zee has to be honest and say that yes, Zee would feel compelled to report a HIV-positive pregnant woman for child abuse. Zee is, of course, a mandated reporter of child about and neglect, and since Zee feels the child born with HIV will be placed in harms way, reporting the situation is believed to be the right thing to do. The example of Counselor Zee is but one of an infinite number that can be imagined where individuals might have one way their attitude is when considering something from a distance (e.g., Zee's social justice views for PLHIV), but it may (or may not) change when considering it being in the same room as themselves (e.g., Zee having a PLHIV as a client).

This type of example could be extended to attitude towards other demographics, not just towards HIV/AIDS. Consider the current Syrian refugee issue. Many people might think that yes, of course the U.S. should assist with refugees; that yes, of course such individuals need help and assistance; perhaps even yes, those individuals are experiencing challenges unique to themselves that many others simply cannot relate. But ask those same helpful, caring, and responsive individuals about how many refuges they are willing to house in their personal home, and that attitude toward refuges might start to differ.

There could be an any number of combinations about how attitude towards PLHIV (or any demographic) fall with any given individual (more favorable societal, more favorable personal; less favorable societal, less favorable personal; etc.). The point is that when considering attitude, it seems almost natural to do so in a way that denotes a

relational aspect to the attitude. Attitude toward a target object may change based on how close it is to the individual. With the sample for this study, this was the case, and the items grouped into personal and societal categories. The original theory for this study was conceptualized that attitude towards PLHIV might be a yard stick, sitting vertically in front of individuals, ranging from affirming to violent. The data, however, suggests that this might be better thought of as a measuring tape being held onto by an individual, spanning outward horizontally. The measuring tape has two dimensions of the personal (closer to the individual) to societal (getting further from the individual). Such a consideration leads to a great deal of further discussion for how attitude towards PLHIV is measured; how attitude towards other demographics is measured; and opportunities for future research.

5.2.6 The MHP-PLHIV-ASS: Further Research

Much of the further research has been discussed throughout the previous sections relating to item refinement in order to strengthen the MHP-PLHIV-AS. Items could be reworded, items could be added to the societal dimension, items could be removed from the personal dimension, etc. Further research is also indicated relating to determining a matrix where the scores of the two categories are combined to describe an overall attitude toward PLHIV as noted in the proceeding section.

Seeing how attitude towards PLHIV is a culmination of scores in two dimensions suggests further research in developing a profile matrix for how those combine to determine an overall attitude. An example of such a matrix is provided in Figure 5-1. The notion of two points of information which must be considered separately then combined to determine an overarching level of the construct is found in the work by

Long and Lindsey (2004), who suggested the "Sexual Orientation Matrix for Supervision (SOMS)." The SOMS depicts a profile matrix for conceptualizing the intersection between lesbian, gay, and bisexual orientations and behaviors, with the level of heterosexual bias. It is used to better understand mental health practitioners' clinical training and supervision.

Such a matrix is also found in the work by Perroud, Ray, and Friedrichsen (2006). These researchers investigated overall satisfaction of airline passengers by collecting satisfaction survey information from over 400,000 passengers of over 20 airlines. What they found is that to understand how pleased or displeased with an airline experience a passenger was, more was required than a one-dimension view of the satisfaction construct. Rather, they discovered, that satisfaction and dissatisfaction were two different dimensions of the same overarching variable. To do determine a meaningful representation of how a passenger felt, the investigators proposed a matrix where satisfaction and dissatisfaction were analyzed as two dimensions of the same overall construct.

The MHP-PLHIV-AS's dimensions should be investigated from this same approach to determine the statistically meaningful classifications in which it places people. Consider the differences and what they say about individuals depending on how they score (represented in Figure 5-1):

- high societal/high personal;
- high societal/low personal;
- low societal/high personal;
- low societal/low personal.

When the dimensions are considered as a combined profile as defining the overall level of attitude, the denoting where a person scores on the continuum (ranging from affirming to violent) becomes possible. With a matrix established, someone implementing the MHP-PLHIV-AS could provide great detail of a person's attitude towards PLHIV. The implementer would be able to describe the attitude of the person in terms of both societal and personal categories, as well as the overall "level of favor" of the person. This in turn could inform clinical supervisor assignment of clients who are HIV-infected to appropriate clinicians; could suggest areas of development for a mental health professional; or with large groups (e.g., graduate students) inform an instructor of where to focus knowledge and attitude changes.

Additional considerations should also be given to further research with the MHP-PLHIV-AS. The MHP-PLHIV-AS could be utilized as an element to investigate the competency of MHPs working with PLHIV. Competency is evaluated by looking at not only attitude, but knowledge, skill, and action as well (Ratts et al., 2015; Sue et al., 1982; Sue & Sue, 2012). A knowledge questionnaire appropriate for mental health professionals has been created (Rose, Osborne, Hairston, Laux, & Pawelczak, 2015). Although further study on it is warranted, the MHP-PLHIV-AS could serve as the attitude component of a full competency instrument. Competency elements of skill and action for this demographic are not yet available, but they are being created by these researchers.

The use of the attitude towards PLHIV scale could also be explored for use with the general population. Some items on the current instrument would need to be reworded to remove references to working with clients, but some questions could likely remain as

written. Of course, similar diagnostics and analyses would need to be investigated on if such an instrument is a valid and reliable instrument for use with the general public, but the idea and potential instrument is worthy of exploration. Knowing the attitude of the general population could help inform a variety of professionals working in the field of PLHIV. Public health officials would gain insight as to barriers in prevention; infectious disease doctors might better understand attitudes of patients newly with HIV (which can assist in medication adherence); and more. It should at least be explored given the lack of current, appropriate attitude towards PLHIV scales. The only current instruments are outdated for today's knowledge of HIV and AIDS (Froman, Owen, & Daisy, 1992; Froman & Owen, 2001; Shrum, Turner, & Bruce, 1989), do not have good levels of unidimensionality, and are not conceptualized as being toward PLHIV (the demographic) but rather AIDS (the final stage of the disease process).

One final recommendation for further research rests in returning focus to the data gathered in the validation study. The purpose of this study was the development and validation of an instrument which would investigate MHPs' attitude towards PLHIV. As such, the focus has been from an Item Response Theory (IRT) standpoint and measurement analysis. Now that the MHP-PLHIV-AS has been shown to measure attitude towards PLHIV, there may be benefit, especially since the data has already been collected, to turn a Classical Test Theory (CTT) lens back on the validation study data for different analyses. It could be explored how the population scored on the individual items and the scale as a whole. It could be examined to see if there are differences between the counseling, social work, and psychology professions in their attitudes towards PLHIV. Rose et al. (2015) considered if there was any correlation to knowledge

of HIV/AIDS and other variables such as (a) age, (b) sex, (c) knowing someone who was HIV-positive, and (d) having been tested for HIV. These investigations could be mirrored when considered with attitude (instead of knowledge) as the demographic questions asked the same questions as the original Rose et al. study.

5.2.7 The MHP-PLHIV-AS: Uses

It is hoped that the MHP-PLHIV-AS can assist in identifying gaps in training of mental health professionals (MHPs). Rose et al. (2015) found that few professional counselors receive HIV/AIDS education in their university programs, and even less find continuing education opportunities once credentialed and working in the field. This leaves MHPs lacking in discussions relating to HIV/AIDS. When attitude is, in part, influenced by knowledge (Carney, Werth, & Emmanuelson, 1994; Rose et al., 2015), then education truly is one of the keys to increasing attitude towards PLHIV. University programs, and professional workshops, seminars, and conferences need to increase the amount of knowledge in working with this population. Without demonstrated evidence, however, that there is a lack of such needed education, it is not likely to improve. Utilizing the MHP-PLHIV-AS to demonstrate this need could be helpful when discussing counselor competency and preparedness, as has been the case with other diverse culture-related, competency-driven recommendations (Bidell, 2005; O'Hara, Dispenza, & Blood, 2013).

Another area where the MHP-PLHIV-AS could be beneficial is directly in the field with MHPs providing direct mental health services. If a supervisor is determining who to assign a PLHIV to for mental health services, it would be of great benefit to them to know who among their staff has an appropriate level of favorable attitude towards such

a client. Knowing of a less favorable attitude toward such a client would also be helpful for supervisors to know, as it would suggest areas for staff improvement.

5.3 Implications Regarding the Construct of Attitude

The results of this study have implications that reach beyond just the new instrument created and the mental health professions that were under investigation. The results demonstrate a societal and personal dimension to the construct of attitude, at least as they relate to PLHIV and HIV/AIDS. The question that naturally follows is, "Could this true of other attitudes relating to other, culturally diverse populations?"

Is it the case when individuals consider other demographics, that their attitudes depend on both societal and personal dimensions as well? Do White/Caucasian individuals have an attitude towards Hispanic/Latinos, for example, one way when considered living next door versus from a social justice standpoint? Do Native Americans derive attitudes about Black/African Americans depending advocacy efforts to fight racisms in America, but different when sitting side-by-side on a public bus? What if attitude as a whole is relational? This possibility certainly warrants further study and investigation.

What would such a take on attitude mean for existing modes of thought, such as for competency of professionals? The *Multicultural and Social Justice Counseling Competencies* (*MSJCC*), define counseling competency based on knowledge, skill, attitude, and action (Ratts et al., 2015). The idea behind them is that counselors must not only be competent with multiculturalism, but also with social justice and advocacy efforts. How does attitude change, shape, and enhance the understanding of competency if, in relation to cultures different than that of the counselor, it was two-dimensions of

societal and personal? Would this not pose significant implications when considering social justice competency? The discussion in this are needs to continue as we strive to better understand, define, and measure the construct of attitude, especially as it relates to providing mental health services to diverse clients.

5.4 Limitations

Limitations to this study should be acknowledged. First, the societal dimension has less than exemplar dimensionality. This is a limit in what can be said at this time about the dimension and about the sample investigated in this study. This study does, however, provide practical recommendations for addressing this issue. Secondly, as discussed earlier in this chapter, a few of the instrument's items misfit with the dimensions and the instrument as a whole. While it does not discount the results demonstrated with this study, it does warrant further work on refining and enhancing the items. It would be hoped that such edits would in turn better the dimensions, and therefore also the scale overall.

Next, although diversity in individuals and their experience was sought for the Content Evaluation Panel (CEP), it is unknown how the instrumentation may have been created with a larger, or even a different group of experts. As results demonstrated more fully in Chapter 4, Rasch diagnostics helped determine the extent of unidimensionality of both the attitude constructs and the dimensions identified as being appropriate in measuring the variable. Therefore, even if a different or larger CEP had been utilized, it does not discount that the evidence that the instrument is measuring attitude towards PLHIV well.

Another limitation could be the differences between the pilot test sample (Phase II) and the Phase III sample. Phase II was only graduate-level university students which may have varying attitudes than those more experienced in the field. Here again, the analysis through RMM helped determine the item fit of the instrument itself and the independence of the items and instrument, so the typical sampling procedure limitations should be overcome. Finally, as with any self-report instrument, the issue of social desirability by participants may pose challenges. As noted previously, the use of an online survey was hoped to reduce this issue. The fact that some mental health professionals answered they agreed to less favorable attitudes (e.g., that HIV/AIDS is a punishment from God) suggests that for at least some participants, they felt more free to express themselves via an online measure. It remains unclear, however, if the reduction of social desirability is removed enough from a statistical significance vantage point.

5.5 Conclusion

This study has produced a useful, meaningful instrument in measuring mental health professionals' attitude towards people living with HIV and/or AIDS (PLHIV). Additionally, it found that such attitude groups into societal and personal dimensions; a finding not found anywhere in the professional literature. Such results suggest it might be the case for attitude towards other demographics as well. Although the instrument would benefit from enhancement, it does not discount the contribution this study makes in furthering appropriate and beneficial mental health services for those PLHIV. Yet, this study is but the initial step in work on the topic point of attitude towards PLHIV. There remains work and research to be done to enhance the knowledge of, and impact the training of, mental health professionals who work with those infected, affected, and at-

risk of HIV-infection. It is certainly the intent of these researchers to ensure such work continues moving forward.

References

Abbott, A. (1983). Professional ethics. *American Journal of Sociology, 88*(5), 855-885. doi: 10.1086/227762

Acuff, C., Archambeault, J., Greenberg, B., Hoeltzel, J., McDaniel, J. S., Meyer, P., … Wagner, D. (1999). *Mental health care for people living with or affected by HIV/AIDS: A practical guide*. Rockville, MD: Substance Abuse and Mental Health Services Administration (SAMHSA).

Aiden, H., & McCarthy, A. (2014). *Scope about disability: Current attitudes towards disabled people*. Retrieved from http://www.scope.org.uk/Scope/media/Images/Publication Directory/Current-attitudes-towards-disabled-people.pdf?ext=.pdf

Alford, J. (2014, May 27). A man was cured of HIV in 2008, and hardly anyone knows about it. *IFLScience.com*. Retrieved from http://www.iflscience.com/health-and-medicine/man-was-cured-hiv-2008-and-hardly-anyone-knows-about-it

American Association for Counseling and Development (AACD) Governing Council. (1988, July). *AACD position statement on acquired immune deficiency syndrome*. Symposium conducted at the meeting of the AACD Governing Council, Alexandria, VA.

American Association for Counseling and Development (AACD). (1989, March 2). Position statement on acquired immune deficiency syndrome. *Guidepost*, p. 27.

American Association of Colleges of Nursing, Quality and Safety Education for Nurses (QSEN) Education Consortium. (2012). *Graduate-level QSEN competencies: Knowledge, skills, and attitudes* (September 24, 2012). Retrieved from http://www.aacn.nche.edu/faculty/qsen/competencies.pdf

American Counseling Association (ACA). (2014). *ACA code of ethics*. Alexandria, VA: Author.

American Psychological Association (APA). (2002). *Guidelines on multicultural education, training, research, practice, and organizational change for psychologist: American Psychological Association*. Washington, DC: Author.

American Psychological Association (APA). (2008). *Report of the task force on the implementation of the multicultural guidelines*. Washington, DC: Author.

Andrich, D. (1978). Relationships between the Thurstone and Rasch approaches to item scaling. *Applied Psychological Measurement, 2*(3), 449-460. doi: 10.1177/014662167800200319

Anselmi, P., Vianello, M., & Robusto, E. (2013). Preferring thin people does not imply derogating fat people: A Rasch analysis of the implicit weight attitude. *Obesity, 21*(2), 261-265. doi: 10.1002/oby.20085

Antonak, R. F. (2000). Measurement of attitudes towards persons with disabilities. *Disability and Rehabilitation, 22*(5), 211-225. doi:10.1080/096382800296782

Arredondo, P., Toporek, M. S., Brown, S., Jones, J., Locke, D. C., Sanchez, J., & Stadler, H. (1996). *Operationalization of the multicultural counseling competencies*. Alexandria, VA: Association for Multicultural Counseling and Development.

Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: Revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development, 47*(1), 79-86. doi: 10.1177/0748175613513808

Badiee, J., Moore, D. J., Atkinson, J., Vaida, F., Gerard, M., Duarte, N. A., … Grant, I. (2012). Lifetime suicidal ideation and attempt are common among HIV-positive individuals. *Journal of Affective Disorders, 136*(3), 993-999. doi:10.1016/ j.jad.2011.06.044

Baker, T. L. (1998). *Doing social research* (3rd ed.). New York, NY: McGraw-Hill Inc.

Baker, F. B., & Kim, S.-H. (2004). *Item Response Theory: Parameter estimation techniques* (2nd ed.), Statistics: A series of textbooks and monographs). Boca Raton, FL: CRC Press, LLC.

Barnouw, V. (1979). *Culture and personality*. Homewood, IL: The Dorsey Press.

Bidell, M. P. (2005). The sexual orientation counselor competency scale: Assessing attitudes, skills, and knowledge of counselors working with lesbian, gay, and bisexual clients. *Counselor Education and Supervision, 44*(4), 267-279. doi:10.1002/j.1556-6978.2005.tb01755.x

Bond, T. G., & Fox, C. M. (2015). *Applying the Rasch model: Fundamental measurement in the human sciences* (3rd ed.). New York, NY: Routledge.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Carballo-Diéguez, A. (1989). Hispanic culture, gay male culture, and AIDS: Counseling implications. *Journal of Counseling & Development, 68*(1), 26-30. doi:10.1002/j.1556-6676.1989.tb02487.x

Carney, J., Werth, J. L., & Emanuelson, G. (1994). The relationship between attitudes toward persons who are gay and persons with AIDS, and HIV and AIDS knowledge. *Journal of Counseling & Development, 72*(6), 646-650. doi:10.1002/j.1556-6676.1994.tb01696.x

Catalan, J. J., & Pugh, K. K. (1995). Suicidal behavior and HIV infection – is there a link? *AIDS Care, 7*(5), 117-122. doi:10.1080/09540129550126092

Centers for Disease Control and Prevention (CDC). (1981). *Pneumocystis Pneumonia – Los Angeles* (CDC Morbidity and Mortality Weekly Report [MMWR], 30[21], 1-3). Retrieved from CDC MMWR archive: http://www.cdc.gov/mmwr/preview/mmwrhtml/ june_5.htm

Centers for Disease Control and Prevention (CDC). (1982). *Current trends update on acquired immune deficiency syndrome (AIDS) – United States* (CDC Morbidity and Mortality Weekly Report [MMWR], 31[37], 507-508, 513-514). Retrieved from CDC MMWR archive: http://www.cdc.gov/mmwr/preview/mmwrhtml/00001163.htm

Centers for Disease Control and Prevention (CDC). (1985). *Current trends recommendations for assisting in the prevention of perinatal transmission of human T-lymphotropic virus type III/lymphadenopathy-associated virus and acquired immunodeficiency syndrome.* (CDC Morbidity and Mortality Weekly

Report [MMWR], 34[48], 721-726, 731-732). Retrieved from CDC MMWR archive: http://www.cdc.gov/mmwr/preview/mmwrhtml/ 00033122.htm

Centers for Disease Control and Prevention (CDC). (2006). *The global HIV/AIDS Pandemic, 2006.* (CDC Morbidity and Mortality Weekly Report [MMWR], 55[31], 841-844). Retrieved from CDC MMWR archive: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5531a1.htm

Centers for Disease Control and Prevention (CDC). (2009). *Choosing life! Empowerment! Action! Results! (CLEAR): Implementation manual*. Atlanta, GA: Author.

Centers for Disease Control and Prevention (CDC). (2012). *Monitoring selected national HIV prevention and care objectives by using HIV surveillance data: United States and 6 U.S. dependent areas—2010*. (HIV Surveillance Supplemental Report 2012, 17, No. 3, Part A). Atlanta, GA: Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services.

Centers for Disease Control and Prevention. (2015a, September). *HIV among gay and bisexual men*. Retrieved from http://www.cdc.gov/hiv/group/msm/index.html l

Centers for Disease Control and Prevention (CDC). (2015b, June). *HIV among youth*. Retrieved from http://www.cdc.gov/hiv/group/age/youth/index.html

Centers for Disease Control and Prevention (CDC). (2015c, September). *HIV in the United States: At a glance*. Retrieved from http://www.cdc.gov/hiv/statistics/overview/ataglance.html

Centers for Disease Control and Prevention (CDC). (2015d). *PrEP*. Retrieved from http://www.cdc.gov/hiv/basics/prep.html

Centers for Disease Control and Prevention (CDC). (2016a, February). *HIV among African Americans*. Retrieved from http://www.cdc.gov/hiv/risk/racialethnic/africanamericans/facts/index.html

Centers for Disease Control and Prevention (CDC). (2016b, February). *HIV among African American gay and bisexual men*. Retrieved from http://www.cdc.gov/hiv/group/msm/bmsm.html

Chang, K.-C., Wang, J.-D., Tang, H.-P., Cheng, C.-M., & Lin, C.-Y. (2014). Psychometric evaluation, using Rasch analysis, of the WHOQOL-BREF in heroin-dependent people undergoing methadone maintenance treatment: Further item validation. *Health and Quality of Life Outcomes, 12*(1), 148-156. doi: 10.1186/s12955-014-0148-6

Cohen, J. (2012, June 11). Evidence that man cured of HIV harbors viral remnants triggers confusion. *ScienceInsider.com*. Retrieved from http://news.sciencemag.org/2012/06/evidence-man-cured-hiv-harbors-viral-remnants-triggers-confusion?ref=hp

Coleman, E., & Remafedi, G. (1989). Gay, lesbian, and bisexual adolescents: A critical challenge to counselors. *Journal of Counseling & Development, 68*(1), 36-40. doi:10.1002/j.1556-6676.1989.tb02489.x

Constantine, M. G., Gloria, A., & Ladany, N. (2002). The factor structure underlying three self-report multicultural counseling competence scales. *Cultural Diversity and Ethnic Minority Psychology, 8*(4), 334-345. doi:10.1037//1099-9809.8.4.334

Council for Accreditation of Counseling and Related Educational Programs (CACREP). (2009). *CACREP 2009 standards*. Alexandria, VA: Author.

Creative Research Systems. (2012). Sample size calculator. Retrieved from http://www.surveysystem.com/sscalc.htm

Deal, M. (2003). Disabled people's attitudes toward other impairment groups: A hierarchy of impairments. *Disability & Society, 18*(7), 897-910. doi: 10.1080/0968757903200012731 7

De Battisti, F., Nicolini, G., & Salini, S. (2010). The Rasch model in customer satisfaction survey data. *Quality Technology & Quantitative Management, 7*(1), 15-34. doi:

Dorn, F. J. (2011). The social influence model: A social psychological approach to counseling. *Journal of Counseling & Development, 62*(6), 342-345. doi: 10.1111/j.2164-4918.1984.tb00221.x

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt, Brace, Jovanovich.

Eagly, A. H., & Chaiken, S. (1998). Attitude and function. In D. T. Gilbert, S. T. Fiske, & Lindzey, G. (Eds), *The handbook of social psychology* (Vols. 1 and 2) (pp. 269-322). New York, NY: McGraw-Hill.

Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition, 25*(5), 573-581. doi: 10.1521/soco.2007.25.5.582

Enose, M. (2008). Steps leading to a straight line: Constructing a variable. *Rasch Measurement Transactions, 22*(1). Retrieved from http://www.rasch.org/rmt/rmt221f.htm

Fendrich, M., Smith, E. V., Jr., Pollack, L. M., & Mackesy-Amiti, M. E. (2009). Measuring sexual risk for HIV: A Rasch scaling approach. *Archives of Sexual Behavior, 38*(6), 922-935. doi: 10.1007/s10508-008-9385-2

Fischer, W. P., Jr. (2007). Rating Scale Instrument Quality Criteria. *Rasch Measurement Transactions, 21*(1), 1095. Retrieved from http://www.rasch.org/rmt/rmt211m.htm

Fisher, M. (2012, February 6). A history of the ban on federal funding for syringe exchange programs. *Center for Strategic & International Studies*. Retrieved from http://www.smartglobalhealth.org/blog/entry/a-history-of-the-ban-on-federal-funding-for-syringe-exchange-programs/

Fox, C. M., & Barnes, P. A. (2016, April). *Meaningful quantification: A scaffolded endorsement framework for scaling psychological constructs*. Paper presented at the American Educational Research Association, Washington, D.C.

Fox, C. M., & Jones, J. A. (1998). Using of Rasch modeling in counseling psychology research. *Journal of Counseling Psychology, 45*(1), 30-45. doi:10.1037//0022-0167.45.1.30

Franceschini, L. A., III. (2000). *Navigating electronic survey methods: Three pilot studies*. (ERIC Document Reproduction Service No. 448183).

Frieden, T. R., Das-Douglas, M., Kellerman, S. E., & Henning, K. J. (2005). Applying public health principles to the HIV epidemic. *The New England Journal of Medicine, 353*(22), 2397-2402. doi:10.1056/NEJMsb053133

Froman, R. D., Owen, S. V., & Daisy, C. (1992). Development of a measure of attitudes toward persons with AIDS. *Journal of Nursing Scholarship, 24*(2), 149-152. doi:10.1111/j.1547-5069.1992.tb00240.x

Froman, R. D., & Owen, S. V. (1998). Further validation of the AIDS attitude scale. *Research in Nursing and Health, 20*(2), 161-167. doi:10.1002/(SICI)1098-240X(199704)20: 2%3C161::AID-NUR8%3E3.0.CO;2-I

Froman, R. D., & Owen, S. V. (2001). Measuring attitudes toward persons with AIDS: The AAS-G as an alternate form of the AAS. *Scholarly Inquiry for Nursing Practice, 15*(2), 161-177.

Gallo, M. (2011). Measuring passenger satisfaction: A strategy based on Rasch analysis and the ANOM. *Journal of Applied Quantitative Methods, 6*(2), 27-35.

Gallo, R. C., & Montagnier, L. (2003). The discovery of HIV as the cause of AIDS. *The New England Journal of Medicine, 349*(24), 2283-2285. doi:10.1056/ NEJMp038194

Gawronski, B. (2007). Editorial: Attitudes can be measured! But what is an attitude? *Social Cognition, 25*(5), 573-581. doi: 10.1521/soco.2007.25.5.573

Gholipour, B. (2014, September 25). Only 1 person has been cured of HIV: New study suggests why. *LiveScience.com*. Retrieved from http://www.livescience.com/ 48015-berlin-patient-hiv-treatment.html

Granello, D. H., & Wheaton, J. E. (2004). Online data collection: Strategies for research. *Journal of Counseling & Development, 82*(4), 387-393. doi: 10.1002/j.1556-6678.2004. tb00325.x

Gray, L. A., & Harding, A. K. (1988). Confidentiality limits with clients who have the AIDS virus. *Journal of Counseling & Development, 66*(5), 219-223. doi:10.1002/j.1556-6676.1988.tb00851.x

Gray-Little, B., & Hafdahl, A. R. (2000). Factors influencing racial comparisons of self-esteem: A quantitative review. *Psychological Bulletin, 126*(1), 26-54. doi: 10.1037/0033-2909.126.1.26

Grohol, J. M. (2011). *Mental health professionals: U.S. statistics*. Retrieved from http://psychcentral.com/lib/mental-health-professionals-us-statistics/

Hammer, D. P. (2000). Professional attitudes and behavioirs: The "A's and "B's" of professionalism. *American Journal of Pharmaceutical Education, 64*, 455-464. Retrieved from http://www.aacp.org/resources/studentaffairspersonnel/studentaffairspolicies/documents/asandbsofprofessinalism.pdf

Harding, A. K., Gray, L. A., & Neal, M. (1993). Confidentiality limits with clients who have HIV: A review of ethical and legal guidelines and professional policies. *Journal of Counseling & Development, 71*(3), 297-305. doi:10.1002/j.1556-6676.1993.tb02216.x

Hawthorne, G., Sansoni, J., Hayes, L., Marosszeky, N., & Sansoni, E. (2014). Measuring patient satisfaction with health care treatment using the Short Assessment of Patient Satisfaction measure delivered superior and robust satisfaction estimates. *Journal of Clinical Epidemiology, 87*(5), 527-537. doi: 10.1016/j.jclinepi.2013.12.010

Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). *Applied statistics for the behavioral sciences*. Boston, MA: Houghton Mifflin Company.

Hedge, B. B. (1990). The psychological impact of HIV/AIDS. *AIDS Care, 2*(4), 381-383. doi:10.1080/09540129008257758

Hogg, M., & Vaughan, G. (2005). *Social Psychology* (4th ed.). London, United Kingdom: Prentice-Hall.

Hogg, M., & Vaughan, G. (2013). *Social Psychology* (7th ed.). London, United Kingdom: Pearson Education, Limited.

Holt, J. L., Houg, B. L., & Romano, J. L. (1999). Spiritual wellness for clients with HIV/AIDS: Review of counseling issues. *Journal of Counseling & Development, 17*(2), 160-170. doi:10.1002/j.1556-6676.1999.tb02436.x

Hunt, B. (1996). HIV/AIDS training in CACREP-approved counselor education programs. *Journal of Counseling & Development, 74*(3), 295-299. doi:10.1002/j.1556-6676.1996.tb01869.x

Hult, J. R., Wrubel, J., Pietrucha, M., Maurer, S., Stephens, E., & Moskowitz, J. (2007). Who should you tell and why: Disclosure narratives from people newly diagnosed with HIV. *Annals of Behavioral Medicine, 33*, S15.

International Business Machines (IBM) Corporation. (2013). IBM SPSS Statistics for Macintosh (Version 22.0) [Computer Software]. Armonk, NY: Author

Joint United Nations Programme on HIV/AIDS (UNAIDS). (2011). *UNAIDS terminology guidelines* (Rev ed.). Retrieved from http://www.unaids.org/sites/default/files/ media_asset/JC2118_terminology-guidelines_en_0.pdf

Jones, M. (2003). Reconciling personal and professional values and beliefs with the reality of teaching: Findings from an evaluative case study of 10 newly qualified

teachers during their year of induction. *Teacher Development, 7*(3), 385-401. doi: 10.1080/13664530300200206

Kalichman, S., Rompa, D., Cage, M., DiFonzo, K., Simpson, D., Austin, J., … Graham, J. (2001). Effectiveness of an intervention to reduce HIV transmission risks in HIV-positive people. *American Journal of Preventive Medicine, 21*(2), 84-92. doi:10.1016/S0749-3797(01)00324-5

Kegeles, S. M., Hays, R. B., & Coates, T. J. (1996). The Mpowerment project: A community-level HIV prevention intervention for young gay men. *American Journal of Public Health, 86*(8), 1129-1136. doi: 10.2105/AJPH.86.8_Pt_1.1129

Kelley, T., Ebel, R., & Linacre, J. M. (2002). Item discrimination indices. *Rasch Measurement Transactions, 16*(3), 883-884. Retrieved from http://www.rasch.org/ rmt/rmt163a.htm

Kelly, J. A., St. Lawrence, J. S., Diaz, Y., Stevenson, L. Y., Hauth, A. C., Brasfield, T. L. …Andrew, M. E. (1991). HIV risk behavior reduction following intervention with key opinion leaders of population: An experimental analysis. *American Journal of Public Health, 81*(2), 168-171. doi: 10.2105/AJPH.81.2.168

Kelly, J. A. (2004). Popular opinion leaders and HIV prevention peer education: Resolving discrepant findings, and implications for the development of effective community programmes. *AIDS Care, 16*(2), 139-150. doi: 10.1080/ 09540120410001640986

Kindlon, D. J., Wright, B. D., Raudenbush, S. W., & Earls, F. (1996). The measurement of children's exposure to violence: A Rasch analysis. *International Journal of*

Methods in Psychiatric Research, 6(4), 187-194. doi: 10.1002/(SICI)1234-988X(199612)6: 4%3C187::AID-MPR161%3E3.3.CO;2-A

Kim, B. S. K, & Omizo, M. M. (2005). Asian and European American cultural values, collective self-esteem, acculturative stress, cognitive flexibility, and general self-efficacy among Asian American college students. *Journal of Counseling Psychology, 52*(3), 412-419. doi: 10.1037/0022-0167.52.3.412

Knox, M. D., Davis, M., & Friedrich, M. A. (1995). The HIV mental health spectrum. *AIDS Patient Care, 9*(1), 20-27. doi:10.1007/BF02188878

Kline, P. (2000). *Handbook of psychological testing* (2nd ed.). New York, NY: Routledge.

Koehn, D. (2001). *The ground of professional ethics*. New York, NY: Routledge.

Kubinger, K. D. (2005). Psychological test calibration using the Rasch model: Some critical suggestions on traditional approaches. *International Journal of Testing, 5*(4), 377-394. doi: 10.1207/s15327574ijt0504_3

Kyriakides, L., Kaloyirou, C., & Lindsay, G. (2006). An analysis of the revised Olweus Bully/Victim Questionnaire using the Rasch measurement model. *British Journal of Educational Psychology, 76*(4), 781-801. doi: 10.1348/000709905X53499

Lachance, A. M., Benton, C. J., Klein, B. S. (2007). The school-based activities model: A promising alternative to professional development schools. *Teacher Education Quarterly, 4*(3), 95-111.

Laux, J. M., Young, J. A., McLaughlin, L., & Perera-Diltz, D. (2006). The development of a French version of the SOS-10 (SOS-10-F). *Canadian Journal of Counselling, 40*(4), 195-208.

Lafeuillade, A. (2012, June 11). The so called HIV cured "Berlin Patient" still has detectable HIV in his body. *UK.PRWeb.com*. Retrieved from http://uk.prweb.com/releases/ 2012/6/prweb9526008.htm

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563-575. doi: 10.1111/j.1744-6570.1975.tb01393.x

Lefever, S., Dal, M., & Matthíasdóttir, Á. (2007). Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology, 38*(4), 574-582. doi:10.1111/j.1467-8535.2006.00638.x

Lerdal, A., Kottorp, A., Gray, C., Aouizerat, B. E., Portillo, C. J., & Lee, K. A. (2011). A 7-item version of the fatigue severity scale has better psychometric properties among HIV-infected adults: An application of a Rasch model. *Quality of Life Research, 20*(9), 1447-1456. doi: 10.1007/s11136-011-9877-8

Leplège, A., Rude, N., Ecosse, E., Ceinos, R., Dohin, E., & Pouchot, J. (1997). Measuring quality of life from the point of view of HIV-positive subjects: The HIV-QL31. *Quality of Life Research, 6*(6), 585-594. doi: 10.1023/ A:1018468301617

Levy, C. S. (1976). Personal versus professional values: The practitioner's dilemmas. *Clinical Social Work Journal, 4*(2), 110-120. doi: 0.1007/BF02142613

Li, J., Liu, H., Liu, H., Feng, T., & Cai, Y. (2011). Psychometric assessment of HIV/STI sexual risk scale among MSM: A Rasch model approach. *BioMed Central Public Health, 11*(1), 763-770.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology, 140*(22), 5-55.

Linacre, J. M. (1998). Detecting multidimensionality: which residual data-type works best? *Journal of Outcome Measurement, 2*(3), 266-283.

Linacre, J. M. (2002). Optimizing rating scale category effectiveness. *Journal of Applied Measurement*, *3*(1), 85-106.

Linacre, J. M. (2005). Dimensionality investigation – an example. *Help for WINSTEPS Rasch Measurement Software*. Retrieved from http://www.winsteps.com/winman/multidimensionality.htm

Linacre, J. M. (2006). Table 2.2 mean observed categories (average or expected categories: Rash-half-point threshholds). *Help for WINSTEPS Rasch Measurement Software*. Retrieved from http://www.winsteps.com/winman/table2_2.htm

Linacre, J. M. (2011). Old Rasch forum: Rasch on the run – 2011. *Rasch Forum*. Retrieved from http://www.rasch.org/forum2011.htm

Linacre, J. M. (2016). *A user's guide to WINSTEPS MINISTEP Rash-Model computer programs* (program manual 3.92.0). Downloaded with WINSTEPS software purchase from www.winsteps.com.

Linacre, J. M., & Tennant, A. (2009). More about critical eigenvalue sizes (variances) in standardized-residual principal components analysis (PCA). *Rasch Measurement Transactions, 23*(3), 1228. Retrieved from http://www.rasch.org/rmt/rmt233f.htm

Long, J., & Lindsey, E. (2004). The sexual orientation matrix for supervision: A tool for training therapists to work with same-sex couples. *Journal of Couple and Relationship Therapy, 3*(2/3), 123-135. Retrieved from http://libres.uncg.edu/ir/uncg/f/E_Lindsey_Sexual_2004.pdf

Mattson, C. I., Campbell, R. T., Karabatsos, G., Agot, K., Ndinya-Achola, J. O., Moses, S., & Bailey, R. C. (2010). Scaling sexual behavior or "sexual risk propensity" among men at risk for HIV in Kisumu, Kenya. *AIDS Behavior, 14*(1), 162-172. doi: 10.1007/s10461-008-9423-z

Messick, S. (1980). Test validity and the ethics of assessment. *American Psychologist, 35*(11), 1012-1027. doi: 10.1037/0003-066X.35.11.1012

Moon, J. A. (1999). *Reflection in learning and professional development: Theory & practice*. New York, NY: Routledge.

Moss, J. M., Gibson, D. M., & Dollarhide, C. T. (2014). Professional identity development: A grounded theory of transformational tasks of counselors. *Journal of Counseling & Development, 92*(1), 3-12. doi: 10.1002/j.1556-6676.2014.00124.x

O'Hara, C., Dispenza, F., Brack, G., & Blood, R. A. C. (2013). The preparedness of counselors-in-training to work with transgender clients: A mixed methods investigation. *Journal of LGBT Issues in Counseling, 7*(3), 236-256. doi: 10.1080/15538605.2013.812929

Oliveira, S. M., Fernandes, D. C., & Sisto, F. F. (2014). Analysis of social anxiety inventory in Brazil using the Rasch rating scale model. *Psychological Reports, 115*(1), 165-178.

Perroud, D., Ray, D., & Friedrichsen, C. (2006). Improving the travel experience: Greater profits through effective satisfaction measures. *Leisure, 4*, 1-11. Retrieved from European Society for Opinion and Marketing Research (ESOMAR) database.

Petty, R. E., Briñol, P., & DeMarree, K. G. (2007). The Meta-Cognitive Model (MCM) of attitudes: Implications for attitude measurement, change, and strength. *Social Cognition, 25*(5), 573-581. doi: 10.1521/soco.2007.25.5.657

Rasch, G. (1960). On general laws and the meaning of measurement in psychology. In J. Neyman (Ed.), *Proceedings of the Fourth Berkeley Symposium on Mathematical Statistics and Probability (Vol. 4): Contributions to Biology and Problems of Medicine* (pp. 321-333). Retrieved from https://projecteuclid.org/euclid.bsmsp/1200512872#info

Rasch, G. (1980). *Probabilistic models for some intelligence and attainment tests*. Chicago, IL: University of Chicago Press.

Ratts, M. J., Singh, A. A., Nassar-McMillan, S., Butler, S. K., & McCullough, J. R. (2015). *Multicultural and social justice counseling competencies (MSJCC)*. Retrieved from http://www.counseling.org/docs/default-source/competencies/multicultural-and-social-justice-counseling-competencies.pdf?sfvrsn=20

Reed, E. E. (2014). Man up: Young men's lived experiences and reflections on counseling. *Journal of Counseling & Development, 92*(4), 428-437. doi: 10.1002/j.1556-6676.2014.00169.x

Refsland, E. W., Hultquist, J. F., & Harris, R. S. (2012). Endogenous origins of HIV-1 G-to-A hypermutation and restriction in the nonpermissive T cell line CEM2n. *PLOS Pathogens, 8*(7), e1002800: 1-12, doi: 10.1371/journal.ppat.1002800

Refsland, E. W., Stenglein, M. D., Shindo, K., Albin, J. S., Brown, W. L., & Harris, R. S. (2010). Quantitative profiling of full APOBEC$_3$ mRNA repertoire in lymphocytes

and tissues: Implications for HIV-1 restriction. *Nucleic Acids Research, 38*(13), 4274-4284. doi: 10.1093/nar/gkq174

Remley, T. P., & Herlihy, B. (2014). *Ethical, legal, and professional issues in counseling*. Boston, MA: Pearson.

Ring, T. (2012, September 7). Is anyone immune to HIV?: A genetic mutation that blocks HIV may hold the key to future treatment and, perhaps, a cure. *HIVPlusMag.com*. Retrieved from http://www.hivplusmag.com/case-studies/research-breakthroughs/2012/09/07/ anyone-immune-hiv

Roberts, S. A., Kiselica, M. S., Fredrickson, S. A. (2002). Quality of life of persons with medical illnesses: Counseling's holistic contribution. *Journal of Counseling & Development, 80*(4), 422-432. doi:10.1002/j.1556-6678.2002.tb00209.x

Robinson-Wood, T. (2013). *The convergence of race, ethnicity, and gender: Multiple identities in counseling* (4th ed.). Upper Saddle River, NJ: Pearson.

Rose, J. S., Osborne, L., Hairston, T., Laux, J. M., & Pawelczak, M. (2015). HIV/AIDS knowledge among professional counselors and counseling students in Ohio. *Journal of LGBT Issues in Counseling*, *9*(1), 2-16. doi: 10.1080/ 15538605.2014.997333.

San Francisco AIDS Foundation (SFAF). (2016). *History of health: Needle exchange in San Francisco*. Retrieved from http://sfaf.org/client-services/syringe-access/history-of-needle-exchange.html?referrer=https://www.google.com/

Schein, E. H. (1999). *The corporate culture survival guide: Sense and nonsense about culture*. San Francisco, CA: Jossey-Bass.

Schillewaert, N., & Meulemeester, P. (2005). Comparing response distributions of offline and online data collection methods. *Journal of Market Research, 47*(2), 163-178.

Schumacker, R., & Smith, E. V. (2007). A Rasch perspective. *Educational and Psychological Measurement, 67*(3), 394-409. doi: 10.1177/0013164406294776

Shea, T. L., Tennant, A., & Pallant, J. F. (2009). Rasch model analysis of the Depression, Anxiety, and Stress Scales (DASS). *BioMed Central Psychiatry, 9*(special section), 1-10. doi: 10.1186/1471-244X-9-21

Shrum, J. C., Turner, N. H., & Bruce, K. E. (1989). Development of an instrument to measure attitudes toward acquired immune deficiency syndrome. *AIDS Education and Prevention, 1*(3), 222-230.

Skovholt, T. M., & Ronnestad, M. H. (1992). Themes in therapists and counselor development. *Journal of Counseling & Development, 70*(4), 505-515. doi: 1 0.1002/j.1556-6676.1992.tb01646.x

Simon, M. K. (2011). *Dissertation and scholarly research: Recipes for success* (2011 ed.). Seattle, WA: Dissertation Success, LLC

Smith, E. V. (2001). Evidence for the reliability of measures and validity of measure interpretation: A Rasch measurement perspective. *Journal of Applied Measurement, 2*(3), 281-311.

Spano, R., & Koenig, T. (2007). What is sacred when personal and professional values collide? *Journal of Social Work Values and Ethics, 4(*3). Retrieved from http://www.jswvearchives.com/

Stelmack, J. Sylzk, J. P., Stelmack, T., Babcock-Parziale, J., Demers-Turco, P., Williams, T., & Massof, R. W. (2004). Use of Rasch person-item map in exploratory data

analysis: A clinical perspective. *Journal of Rehabilitation Research & Development, 41*(2), 233-242. Retrieved from Department of Veterans Affairs database.

Sue, D. W., Bernier, J. E., Durran, A., Felnberg, L., Pedersen, P. B., Smith, E. J., & Vasquez-Nuttall, E. (1982). Position paper: Cross-cultural counseling competencies. *The Counseling Psychologist, 10*(2), 45-52. doi:10.1177/0011000082102008

Sue, D. W., & Sue, D. (2012). *Counseling the culturally diverse: Theory and practice* (6th ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Thurstone, L. L. (1927a). A law of comparative judgment. *Psychological Review, 34*(4), 273-286. doi: 10.1037/h0070288

Thurstone, L. L. (1927b). The unit of measurement in educational scales. *Journal of Educational Psychology, 18*(8), 505-524. doi: 10.1037/h0075524

Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology, 33*(4), 529-554. doi: 10.1086/214483

Tejada, A. J. R., Luque, M. N., Rojas, O. M. L., & Moreno, P. J. P. (2011). Prejudiced attitude measurement using the Rasch rating scale model. *Psychological Reports, 109*(2), 553-572.

Tervo, R. C., & Palmer, G. (2012). Health professional student attitudes towards people with disability. *Clinical Rehabilitation, 18*(8), 908-915. doi: 10.1191/0269215504cr820oa

United Nations. (2012). *United Nations Economic Commission for Europe – Making data meaningful (Part 4): A guide to improving statistical literacy*. Geneva, CH.

U. S. Department of Health and Human Services (HHS). (2008). *Addiction counseling competencies: The knowledge, skills, and attitudes of professional practice (Technical assistance publication [TAP] series 21)*. Washington, DC: Author.

U. S. Government. (2013a). *U. S. Department of Health and Human Services, AIDS.gov: A timeline of AIDS*. Retrieved from http://www.aids.gov/hiv-aids-basics/hiv-aids-101/aids-timeline/

U. S. Government. (2013b). *Report of the U. S. Department of Health and Human Services, AIDS.gov, on stages of HIV infection*. Retrieved from http://www.aids.gov/hiv-aids-basics/just-diagnosed-with-hiv-aids/hiv-in-your-body/stages-of-hiv/

van den Berg, H., Manstead, A. S. R., van der Pligt, J., & Wigboldus, D. H. J. (2006). The impact of affective and cognitive focus on attitude formation. *Journal of Experimental Social Psychology, 42*(3), 373-379. doi: 10.1016/j.jesp.2005.04.009

Van Selm, M., & Jankowski, N. W. (2006). Conducting online surveys. *Quality & Quantity, 40*(3), 435-456. doi: 10.1007/s11135-005-8081-8

Vogel, D. L., Wester, S. R., & Larson, L. M. (2011). Avoidance of counseling: Psychological factors that inhibit seeking help. *Journal of Counseling & Development, 85*(4), 410-422. doi: 10.1002/j.1556-6678.2007.tb00609.x

Ward, P., Clark, T., Zabriskie, R., & Morris, T. (2012). Paper/pencil versus online data collection: An exploratory study. *Journal of Leisure Research, 44*(4), 507-530.

Wilson, R. F., Pan, W., & Schumsky, D. A. (2012). Recalculation of the critical values for Lawshe's content validity ratio. *Measurement and Evaluation in Counseling and Development, 45*(3), 197-210. doi:10.1177/0748175612440286

World Health Organization (WHO). (2010, February 2010). *What is a pandemic?* Retrieved from http://www.who.int/csr/disease/swineflu/frequently_asked_questions/pandemic/en/

Wolfe, E. W., & Smith, E. V. (2007). Instrument development tools and activities for measure validation using Rasch models: Part I – instrument development tools. *Journal of Applied Measurement, 8*(1), 97-123.

Wright, B. D., & Masters, G. N., (1982). *Rating scale analysis*. Chicago: MESA Press.

Yates, S. M. (2011). Chapter 12: Rasch and attitude scales: Explanatory style. In S. Alagumalai, D. D. Curtis, & N. Hungi (Eds.), *Applied Rasch measurement: A book of exemplars (Papers in honour of John P. Keeves)*, (pp. 207-225). New York, NY: Springer Publishing Co.

Appendix A

Content Evaluation Panel Script

Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)

Jared S. Rose, MA, LPC-CR, NCC
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Doctoral Dissertation in Proposal Stage

Information for Content Evaluation Panel (CEP; i.e. Panel of Experts)

1 WHAT

To develop an instrument that measures the attitudes towards PLHV, for use with those who provide mental health services (e.g. counselors, clinically-related psychologists, and clinically-related social workers).

2 WHY

There are a number of reasons why this undertaking:

a. It is Jared's argument that individuals who are HIV+ should be viewed as a unique multicultural group – a diverse group with unique needs that must be addressed for overall wellness, and physical & mental health.
b. Mental health professionals (MHPs) must be prepared to provide appropriate services to those infected with HIV.
c. MHPs competency is most commonly defined by the levels of knowledge, skill, and **attitude** they have regarding a particular demographic (such as HIV+).

1) Of primary concern for this study/dissertation is the **attitude** piece of competency.
2) On a larger scale, the question becomes – are MHP competent in working with HIV+ clients? In order to understand this, a competency measure is needed. The knowledge piece has been created and was published in Feb (led by Jared and included Mark as part of the research team). This current study is to investigate the attitude, which will leave the skill piece yet to be established. Then combined, will form a new – never before seen – HIV/AIDS Competency Scale.

d. Although there are attitude instruments for AIDS, it is Jared's argument that they are not appropriate for current use, nor for MHPs, because:
   1) They are 30 years old, neglecting current scientific knowledge of HIV/AIDS.
   2) They neglect the difference between HIV and AIDS.
   3) They include questions specific to attitudes towards homosexuality – such questions do not measure only HIV/AIDS attitudes; they confound the issue by bringing in attitudes towards homosexuality.
   4) They do not consider issues that are pertinent to helping professionals (e.g. mandated reporting).

e. When considering these primary facts, it is imperative that competency is addressed for those who provide services to PLHIV. This has an impact on MHP training standards and programs.

3 How

Developing a new instrument such as the MHP-PLHIV-AS is no small undertaking. It requires the meticulous design of questions that *measure* attitude. We know that psychological constructs (e.g. attitude) can be measured – but doing so is not easy. The statistical analysis that is planned for this instrument, will determine if a "yard stick" of attitude has been developed. It is Jared's belief that, with your help, it will be. There is an existing exercise/process to assist with such instrument construction which will be used to begin the process, and then discussions regarding question and instrument details will follow.

4 Who

A "Content Evaluation Panel" (CEP), or a panel of experts, must be convened. The panel has been determined as the following:

- A State of Ohio Public Health Official (HIV/AIDS experience of 26 years) – **Mark Pawelczak**
- A dually licensed professional counselor and social worker (HIV/AIDS experience of 25 years) – **Sue Carter**

- A licensed professional counselor (HIV/AIDS experience of 24 years) – **Jared Rose**
- An Ohio County Disease Intervention Specialist (HIV/AIDS experience of 18 years) – **Mary Jay**
- A HIV-positive individual – (HIV positive for 18 years) – **Name kept confidential**
- A second Ohio County Disease Intervention Specialist (HIV/AIDS experience of 2 years) – **Kerry Stanley**

- Note: although not considered part of the CEP itself, a methodologist (**Dr. Christine Fox**) with expertise in instrument construction and the statistical analysis Jared has selected, will also have input in the final questions, answer options, and overall instrument.

The CEP will determine the following:

a. What the levels are, that represent the range (from more favorable to less favorable) of the "attitude yard stick".
b. What questions best fit those levels.
c. What answer options best fit the rating categories and the questions
    1) (e.g. "Strongly Agree" to "Strongly Disagree"? "Not at all" to "Always"? Something else entirely?)
d. Once a bank of questions has been formed, the CEP votes on each question with one of the following responses:
    1) Essential
    2) Useful but not essential
    3) Not necessary
e. Based on the votes of each question, a statistical analysis is then run by Jared to determine which items are included in the MHP-PLHIV-AS. Based on this number of experts on the panel, questions should ideally have everyone on the panel seeing a question as "essential" to be included.

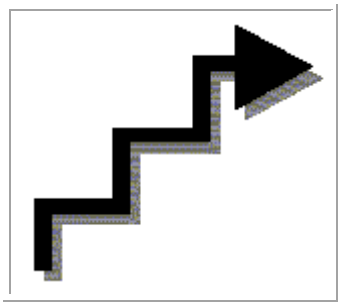
5 WHERE

The CEP will need 2-4 meetings to construct the MHP-PLHIV-AS. As this is the first time an attitude scale towards HIV/AIDS has been constructed, it is difficult to estimate how much time will be spent. Jared is cognizant of everyone's time being valuable and limited and will schedule accordingly for everyone's availability, and strive to keep the meetings productive yet timely.

Appendix B

Steps Leading to a Straight Line: Constructing a Variable

Steps Leading to a Straight Line: Constructing a Variable



Social science involves the study of variables and the aspects, attributes, events, and behaviors that compose it. In social science, we move from ideas and observations to counts, measures, and predictions. The main idea, event, activity, behavior, or dimension on which we focus our observations we call our "variable."

A variable "varies" - the main idea stays the same, but its range of attributes can be arranged along a single line. There can be more of it or less of it. It can be weaker or stronger, smaller or larger, sicker or healthier, pro-something or anti-something. We study a variable because we want to measure its range and study the effects of other events on that range.

1. Can you describe your variable in just a few words, e.g., "patient progress after a certain treatment," or "people's attitudes toward politics?"

2. What theory or ideas underlie your research interest and your selection of a variable?

3. Think about what a "low performer" would be on your variable scale. Describe the kind of person, events, behaviors, etc., which would be at the beginning, or lowest end of your variable scale.

4. Describe a "high performer," a person, event, set of behaviors, etc., that would be at the highest end of your variable.

5. This is the hardest. Describe persons, events, etc. that would be in the middle range of your variable scale.

6. Here (or on a separate sheet) write three items exemplifying the high, middle, and low range of your variable. (You may already have survey items from your ongoing research.) Number each item.

High end items (hard to agree with) / Middle range items / Low end items (easy to agree with)

7. Below is a horizontal line representing your variable. Mark the end points in a way appropriate to your variable, e.g., less - more, easy - hard, sick - healthy. Arrange your items (by their numbers) along this variable line where you think they belong. (In other words, how do you think respondents will react to your items?) If you have trouble figuring out where an item belongs on the line, consider whether it is actually targeted on your variable.

Enose, M. (2008). Steps leading to a straight line: Constructing a variable. *Rasch Measurement Transactions, 22*(1). Retrieved from http://www.rasch.org/rmt/rmt221f.htm

Appendix C

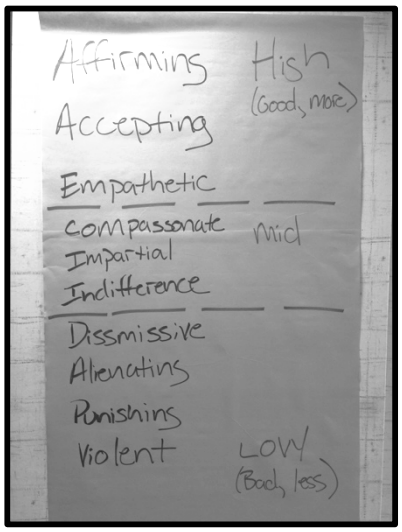
Content Evaluation Panel Scale Construction

Final decisions, all of which have 100% agreement by all six panel members, include the following for the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS).

Scale range: More favorable – less favorable

Likert scale: All questions re-worded to allow for these rating-scale answer responses.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree



Scale with associated items:

Affirming (AFF)

1. PLHIV experience unique problems due to the stigma associated with HIV/AIDS.
2. All humans, including PLHIV, deserve love, respect, and happiness.

Accepting (ACC)

3. It is appropriate that there are social justice and advocacy efforts for PLHIV.
4. I support all PLHIV equally, regardless of how they were infected.

Empathetic (EMP)

5. PLHIV are discriminated against.

Compassionate (COM)

6. It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).

Impartial (IMP)

7. It does not matter one way or another if someone is a PLHIV.

Indifference (IND)

8. PLHIV are just like everyone else.

Dismissive (DIS)

9. PLHIV should only receive mental health services from someone who is also HIV-positive.
10. It confuses me why anyone would put themselves at risk of HIV infection.
11. I should be allowed to choose if I provide mental health services to clients who are HIV-positive.
12. Sexual advances by a PLHIV would make me uncomfortable.
13. Regardless of the mental health services I provide them, clients who are HIV-positive will still infect others.

Alienating (ALI)

14. Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is pointless.
15. I prefer to avoid PLHIV because I'm concerned I will get infected.
16. I would be concerned of getting infected with HIV if I had a client who was HIV-positive.

Punishing (PUN)

17. PLHIV should not have sex with other people.
18. PLHIV should not have children.
19. PLHIV should be isolated from the rest of society.
20. If a PLHIV infects someone, they should be legally prosecuted.
21. If a woman living with HIV/AIDS becomes pregnant, she should be reported for child abuse.
22. Those who get infected with HIV brought it upon themselves.
23. Those who get infected with HIV are immoral.

Violent (VIO)

24. HIV/AIDS is a punishment from God.
25. Providing mental health services to a client who is HIV-positive is pointless as HIV/AIDS is a death sentence anyway.

Appendix D

Sample Email Participation Invitation

Greetings!

You are invited to participate in the research project entitled, *Development and Validation of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS),* which is being conducted at The University of Toledo under the direction of Dr. John M. Laux and Jared S. Rose. The purpose of this study is to develop and validate an HIV/AIDS attitude scale for mental health professionals.

You must be 18 years or older, and have education, training, licensure (and/or certification) as some sort of mental health professional (e.g. counselor, social worker, or psychologist). By following the link below, you will be taken first to the study's informed consent form. After having read and understood the consent form; you will provide your digital signature indicating willingness to participate by clicking "Next". The survey will then appear for you to complete. **The entire process should only take approximately 15-20 minutes**. Your assistance in encouraging others who meet the noted above criteria to participate is greatly appreciated. To that end, feel free to send to colleagues, friends, co-workers, etc. who you think would also wish to provide their voice in this study.

If you have any questions at any time before, during or after your participation, or experience any psychological distress as a result of this research, you should contact the member of the research team who emailed you:

- Dr. John M. Laux: john.laux@utoledo.edu / 419.530.4705
- Jared S. Rose – jared.rose@rockets.utoledo.edu / 419.372.9848

To participate, please go to: https://www.surveymonkey.com/r/MHP-HAAS

Thank you in advance for your participation – it is greatly appreciated,

The University of Toledo's Department of Counselor Education Research Team for *Development and Validation of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)*

University of Toledo IRB Approved
Exempt #20107
Approval Date: 11/25/15

Appendix E

Adult Informed Consent Form

IRB # 201017_____

ICF Version Date: 11/25/15_____

Dept. of School Psychology, Higher Education, and Counselor Education
2801 W. Bancroft St., MS #119
Toledo, Ohio 43614
Phone #
419.530.2718

ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM
Development and Validation of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)

Principal Investigator: John M. Laux, PhD, LPCC-S, LICDC, Professor, 419.530.4705
Jared S. Rose, MA, LPC/CR, NCC, Doctoral Candidate, 419.372.9848

Purpose: You are invited to participate in the research project entitled, *Development and Validation of the Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)* which is being conducted at The University of Toledo under the direction of Dr. John M. Laux and Jared S. Rose. The purpose of this study is to develop and validate an HIV/AIDS attitude scale for mental health professionals.

You must be a mental health professional student or certified or licensed practitioner to participate in this study.

Description of Procedures: This research study will take place in the United States via a survey and demographic questionnaire which can be completed via the Internet. The survey will take approximately 15-20 minutes to complete and asks your attitude regarding HIV and AIDS. After you have completed your participation, the research team will answer any questions you may have about the research, data, or theory.

Potential Risks: There are minimal risks to participation in this study, including loss of confidentiality. This consent form and your survey answers will not be linked, so there is low risk your privacy may be breached. Answering the questionnaire might cause you to feel upset or anxious. If so, you may stop at any time.

Potential Benefits: The only direct benefit to you if you participate in this research may be that you will learn about the types of things which individuals have attitudes about towards HIV and AIDS. Others may benefit by learning about the results of this research, and its part in measuring mental health professionals' attitudes towards HIV and AIDS.

Confidentiality: The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. As the information is gathered via an online tool, no link to your name or personal information is gathered. All gathered data will be password protected and destroyed at the end of the study. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.

Voluntary Participation: Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

Contact Information: Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation you should contact a member of the research team: Dr. John M. Laux at 419.530.4705 or Jared S. Rose at 419.372.9848.

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Office of Research on the main campus at (419) 530-2844.

THE UNIVERSITY OF TOLEDO
SOCIAL, BEHAVIORAL & EDUCATIONAL INSTITUTIONAL REVIEW BOARD

The research project described in this consent has been reviewed and approved as Exempt by the University of Toledo SBE IRB.

SBE IRB #: 201017 Project Start Date: 11/25/15

By clicking on to the next page and beginning the survey, you are verifying that you are 18 years of age or older, are a mental health professional student or certified or licensed practitioner, that you have read and accepted the information above, and that you consent to participate in this research.

Appendix F

Mental Health Professionals' Attitude Towards People Living with HIV/AIDS Scale (MHP-PLHIV-AS)

Instructions: For each of the following questions, please indicate your answer by selecting one of the following:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree

*Note: "PLHIV" refers to "person(s) living with HIV and/or AIDS"

#	STATEMENT	1 (SD)	2 (D)	3 (A)	4 (SA)
1)	PLHIV experience unique problems due to the stigma associated with HIV/AIDS.				
2)	PLHIV are just like everyone else.				
3)	PLHIV should not have sex with other people.				
4)	PLHIV are discriminated against.				
5)	PLHIV should be isolated from the rest of society.				
6)	PLHIV should not have children.				
7)	PLHIV should only receive mental health services from someone who is also HIV-positive.				
8)	If a woman living with HIV/AIDS becomes pregnant, she should be reported for child abuse.				
9)	It confuses me why anyone would put themselves at risk of HIV infection.				
10)	It is appropriate that there are social justice and advocacy efforts for PLHIV.				
11)	I prefer to avoid PLHIV because I'm concerned I will get infected.				
12)	I support all PLHIV equally, regardless of how they were infected.				
13)	Providing mental health services to a client who is HIV-positive is pointless as HIV/AIDS is a death sentence anyway.				
14)	It does not matter one way or another if someone is a PLHIV.				
15)	I should be allowed to choose if I provide mental health services to clients who are HIV-positive.				
16)	Those who get infected with HIV brought it upon themselves.				
17)	If a PLHIV infects someone, they should be legally prosecuted.				
18)	Regardless of the mental health services I provide them, clients who are HIV-positive will still infect others.				
19)	Those who get infected with HIV are immoral.				
20)	All humans, including PLHIV, deserve love, respect, and happiness.				
21)	Attempts to help clients who are HIV-positive who engage in risky behaviors (such as sex with others or sharing needles for drugs) is pointless.				
22)	Sexual advances by a PLHIV would make me uncomfortable.				
23)	I would be concerned of getting infected with HIV if I had a client who was HIV-positive.				
24)	It is appropriate to spend money on HIV/AIDS (i.e. research, care, treatment).				
25)	HIV/AIDS is a punishment from God.				

26) What state do you live in? _____

27) What is your sex? ☐Male ☐Female ☐Trans ☐ Non-binary
☐Other (please list: _____)

28) What is your age? _____

29) What is your race (check all that apply)?
- ☐Native American or Native Alaskan
- ☐Asian
- ☐Black/African American
- ☐Pacific Islander
- ☐White/Caucasian
- ☐Other (please list: _____)

30) What is your ethnicity?
- ☐Hispanic
- ☐Non-Hispanic

31) What is your highest mental health related degree?
- ☐PhD
- ☐MA
- ☐MS
- ☐MEd
- ☐Bachelors
- ☐Current doctoral student
- ☐Current masters student
- ☐A minor in a mental health field
- ☐Other (please list: _____)

32) How many years of experience as a licensed or certified mental health professional do you have? _____

33) What are your current mental health professional credentials (check all that apply)?
- ☐Current counseling masters student
- ☐Current counseling doctoral student
- ☐RCT or CT
- ☐LPC or PC
  - ☐LPC or PC –PROV
  - ☐LPC or PC –CR
- ☐LPCC or PCC
- ☐LPCC-S or PCC-S
- ☐CDCA
- ☐LICDC
- ☐MFT
  - ☐MFT with TEMP
  - ☐IMFT
- ☐Licensed School Counselor (LSC)
- ☐Rehabilitation Counselor
- ☐LCDC-II
- ☐LICDC-CS
- ☐LCDC-III
- ☐National Certified Counselor (NCC)
- ☐Other Counselor (please list: _____)

- ☐Current social worker masters student
- ☐Current social worker doctoral student
- ☐LSW
- ☐LBSW
- ☐LCSW
- ☐LMSW

☐LISW ☐LISW-S
☐Other Social Worker (please list: _____)

☐Current psychology masters student
☐Current psychology doctoral student
☐Limited Licensed Psychologist ☐Licensed School Psychologist
☐Licensed Psychologist
☐ Other Psychologist (please list: _____)

☐ Other Mental Health Professional (please list: _____)

34) In what setting(s) have you had specific HIV/AIDS education (check all that apply)?
☐None
☐University – dedicated class ☐Conference – seminar or session (1-2 hours)
☐University – presentation in class ☐Conference – workshop (2 or more hours)
☐Presentation – community based ☐Other (please list: _____)
☐Presentation – license or certification continuing education

35) To your knowledge, have you known anyone with HIV/AIDS (check all that apply)?
☐No one ☐Family member ☐Friend ☐Client
☐Co-worker or colleague ☐Fellow university student ☐Self
☐Other (please list: _____)

36) Have you ever been tested for HIV? ☐No ☐Yes

37) If yes, how many times? _____
If yes, when was the last time (estimated month / year - ## / ##)? _____/_____