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#### A PILOT STUDY TO DEVELOP THE GAY INDIVIDUAL IDENTITY – SYNTHESIS (GISS) AND THE GAY GROUP MEMBERSHIP – SYNTHESIS (GGMSS) SCALES FOR GAY MEN BASED ON MCCARN AND FASSINGER'S (1996) SEXUAL MINORITY IDENTITY FORMATION MODEL

presented by

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By

Ariel I. Agosto-Cepeda

#### A DISSERTATION

Submitted to Michigan State University In partial fulfillment of the requirements For the degree of

#### DOCTOR OF PHILOSPOHY

Counseling Psychology

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#### ABSTRACT

### A PILOT STUDY TO DEVELOP THE GAY INDIVIDUAL IDENTITY – SYNTHESIS (GIISS) AND THE GAY GROUP MEMBERSHIP – SYNTHESIS (GGMSS) SCALES FOR GAY MEN BASED ON MCCARN AND FASSINGER'S (1996) SEXUAL MINORITY IDENTITY FORMATION MODEL

By

#### Ariel I. Agosto-Cepeda

The LGBT community comprises 10% to 15% of the overall population. Mental health and research fields have held predominantly negative attitudes toward same-sex feelings and behaviors during the first 70 years of the 20<sup>th</sup> century. Since the 70's up until nowadays research findings have emerged suggesting a positive relationship between an individual's acceptance of same-sex feelings and behaviors and psychological adjustment. As a result of the shift in attitudes towards gayness several developmental models of gay identity have emerged. The purpose of this study was to empirically test McCarn and Fassinger's Sexual Minority Identity Formation Model through piloting two scales: Gay Individual Identity – Synthesis Scale (GIISS) and the Gay Group Membership – Synthesis Scale (GGMSS).

Participants consisted of 94 gay men recruited through e-mails sent to listservs of gay men through different associations and groups in the United States and advertisements of the study posted in LGBT chat rooms. In this web-based study, participants were asked to complete instruments measuring gay identity, self-concept, ethnic identity and psychological well being. It was postulated that gay identity was a bidimensional construct comprising individual gay identity and gay group membership. Significant relationships were expected between gay identity, ethnic identity and psychological well being. No significant relationship was expected between gay identity and self-concept. The findings did not support the bidimensionality of gay identity as a construct. Participants did not exhibit any significant changes in self-concept based on their level of gay identity. The level of gay identity did not influence the development of an ethnic identity among the sample. Participants with higher levels of gay identity development appeared to experience lower levels of psychological well being. Implications of the findings, limitations of the study as well as future directions for research and practice are discussed. Copyrighted by

Ariel I. Agosto-Cepeda

#### DEDICATION

In loving memory of my mother, Carmen A. Cepeda, who instilled in me the hunger for knowledge, the importance of persistence, and the value of high moral standards, for showing me what really matters in life, for her infinite love and support.

I dedicate this project to my father, Angel L. Agosto, who showed me what it means to have a perfect work ethic without neglecting his parenting responsibilities, for being present in every major step of my life, for his undying love and support.

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To all my friends, for making my life better.

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#### INTRODUCTION

The purpose of this study was to empirically test a part of McCarn and Fassinger's Sexual Minority Identity Formation Model. More specifically, this study preliminarily tested the Gay Individual Identity – Synthesis (GIISS) and the Gay Group Membership – Synthesis (GMSS) scales, each one containing 10 items purported to measure the Synthesis phases in the Individual Identity Formation and Group Membership processes depicted by McCarn and Fassinger's (1996) model. This is the first phase of a larger study, the purpose of which is to develop the Gay Identity Inventory (GII). This measure will provide information about the current phase of gay identity development of gay men of all ages and different ethnicities who are proficient in the English language and live in urban areas of the United States, according to McCarn and Fassinger's model.

The lesbian, gay, bisexual and transgender (LGBT) community comprises 10% to 15% percent of the overall population (Fassinger, 1991). Same-sex behaviors and relationships have been documented since ancient history (Scasta, 1998). However, the last century witnessed a major shift in the societal views of gayness. Mental health and research fields held predominantly negative attitudes toward same-sex feelings and behaviors during the first 70 years of the twentieth century (Fassinger, 1991). As a result, until the 1970's, most of the psychological research and treatment focused on homosexuality which was presumed as pathological (Garnets & Kimmel, 1993). Most of the treatments at that time dealt with how to "converse" or "reverse" same-sex orientation to heterosexuality (Jordan & Deluty, 1995). During the 1970's, research findings from studies with non-clinical samples suggested that lesbian and gay men who accept their

same-sex feelings and behaviors were more adjusted psychologically than those who try to deny or repress their sexuality (Jordan & Deluty, 1995). Consequently, in 1973 the American Psychiatric Association (APA) removed homosexuality as a personality disorder from the Diagnostic and Statistical Manual, Second Edition (DSM-II). Later on, in 1975, the American Psychological Association not only supported this decision but also encouraged its membership to play a proactive role in removing the stigma associated with same-sex behaviors and feelings (Fassinger, 1991; Garnets & Kimmel, 1993). Accordingly, homosexuality is currently viewed by many as one possible result of normal development in individuals instead of a pathological condition that requires treatment. In fact, recent findings have suggested that promoting a healthy gay identity development in individuals leads to beneficial outcomes (Beals, Peplau & Gable, 2009; Bieschke, Eberz, Bard & Croteau, 1998; Lark & Croteau, 1998, Phillips and Fisher, 1998; Moe, Dupuy & Laux, 2009).

As a result of this shift in attitudes toward gayness, many theorists have proposed several models to describe the gay identity development process (Cass, 1979; Chapman & Brannock, 1987; Coleman, 1982; McCarn & Fassinger, 1996; Minton & McDonald, 1984; Sophie, 1985, 1986; Troiden, 1989). These models are particularly important because they help the therapist to understand the specific challenges faced by this population. However, empirical evidence to support the validity of these models is, at best, inconclusive. To this date, only four published studies (Brady & Busse, 1994; Cass, 1984; Fassinger and Miller, 1996; Halpin & Allen, 2004) have attempted to validate two of these models (Cass, 1979; McCarn & Fassinger, 1996). Of these models, McCarn and Fassinger's (1996) is the most recent one. This gay identity developmental model has two

characteristics that separate it from the rest. First, it was developed considering the role of racial and ethnic diversity in the development of gay identity. Second, rather than conceptualizing gay identity development as a linear process consisting of fixed stages with particular developmental tasks, the model establishes the difference between individual gay identity formation and group membership as two reciprocal but distinct recyclable processes. Although it has not been explicitly established by the authors, this conceptualization suggests that gay identity might be a bidimensional construct. Consequently, this study constitutes the first phase of the development of an instrument to measure gay identity as a multidimensional construct considering the racial and ethnic diversity of the members of the LGBT community in urban areas of the United States.

According to Millman and Greene's (1993) classification scheme, testing the synthesis phases of McCarn and Fassinger's (1996) model through twenty items falls within two levels of the type of inference (individual and group system) and two levels of domain of inference (curricular and criterion). On an individual level, an easily administered measure of gay identity development would facilitate therapists' work in the identification of developmental issues and needs of LGBT clients. This assessment can be considered as a type of diagnosis (curricular inference). Moreover, it would assist therapists in selecting efficient therapeutic interventions to foster the development of a healthy gay identity (criterion). On a systemic level, this measure would enable further research to test the validity of the internal and external models on which the measure is based. Accordingly, the instrument will help the therapist to make decisions on both the individual and systemic levels. On an individual level, the therapist can determine what course of action is most appropriate for the client based on the information gathered

through the instrument. This course of action includes specific therapeutic interventions as well as referrals to other therapeutic and health-related services. On a systemic level, a valid measure of gay identity development will be helpful in identifying the relationship between gay identity development process and other relevant psychological and healthrelated constructs. For example, it is suspected that the level of gay identity development moderates the relationship between safe-sex self-efficacy and the actual practice of safer sex strategies in LGBT individuals. However, a lack of adequate measures has hindered the efforts of supporting this claim with valid empirical evidence. Conclusive evidence about this issue may impact the nature of the guidelines HIV/AIDS prevention programs can use to target the LGBT community.

#### **CHAPTER I**

#### **Literature Review**

## Brief Historical Background of Same-Sex Behavior: From Homosexuality to Gayness

The construct of sexual orientation is a "unique historical phenomenon of the nineteenth and twentieth centuries" (Fassinger and Miller, 1996, p.54). Accordingly, gay identity is considered a social construction rooted in a historical, political and sociocultural reality. Before Judaic law canonized rules against same-sex behavior between men, other ancient cultures seemed to be more tolerant of this behavior. For example, in both the Greek era and the Early Roman Empire, transgenerational same-sex relationships were within the norm (Scasta, 1998). As Christianity became the state religion in the Roman Empire in the third century A.D., the tolerance of same-sex behavior betweit began to wane. Based on the assumption that nature was the manifestation of one of the divine truths, the theologian Augustine (354-430 AD) and, later, St. Thomas Aquinas (1225-1274), concluded that same-sex behaviors were "unnatural" as they were not observed in Nature. Since all behaviors against nature were considered against God, same-sex behaviors were codified as immoral and sinful activities (Scasta, 1998). This view of same-sex behavior as a moral issue held its supremacy for the next six centuries.

It was not until the early 1800s that some academicians proposed an alternative view about the etiology of same-sex behavior. Richard Kraft-Ebing, Karl Ulrichs, Magnus Hirschfeld and Havelock Ellis advocated for organic causes of what was called at the time "homosexuality" (Scasta, 1998). In *Psychopathia Sexualis* (1886), Kraft-Ebbing argued that homosexuality was the cause of perversion while Ellis, in *Sexual* 

*Inversion* (1897), argued that it was inborn. Ulrichs proposed that same-sex behavior was the product of heredity, specifically a feminized brain, whereas Hirschfeld argued that it was the result of glandular secretions. However, with the exception of Hirschfeld, these academicians talked about same-sex behavior from a pathological perspective within the disease model.

The pathological view of homosexuality was reinforced by the psychoanalytic school, particularly the American analysts. Contrary to common belief, Freud's views on homosexuality were not negative. He argued that everybody is bisexual in nature and thought that homosexuals could not change their orientation because "the condition was based on the pleasure principle rather than on the distress of neurosis" (Scasta, 1998, p. 9). Furthermore he did not think that a homosexual identity was an impediment for psychoanalytic training. It was the school of American analysts that rejected the idea of bisexuality in 1940 and adopted the view of homosexuality as "thwarted heterosexuality" (Scasta, 1998, p. 10). The psychoanalytic literature of Irving Bieber, Charles Socarides and Joseph Nicolosi promoted the pathological view of homosexuality. Furthermore, in the 1970s both Socarides and Nicolosi advocated against the removal of homosexuality from the Diagnostic Statistical Manual, Second Edition.

Concurrent with the psychoanalytical literature on homosexuality, other researchers were taking different perspectives on this issue. For example, in his study Sexual Behavior in the Human Male (1948), Alfred Kinsey concluded that same-sex behavior was more frequent than what the general public thought. Ford and Beach (1951) found that 49 of the 76 societies they examined sanctioned same-sex behavior and considered it normal. Maybe the most important contribution came from Evelyn Hooker.

In 1954 she conducted a double blind study with thirty gay men matched with 30 heterosexual men. Using three different projective tests, the blind evaluators were not able to distinguish the two groups, concluding that the pathological findings of the projective testing were not more severe in homosexual men than in heterosexual men (Hooker, 1957). Based on this study, Judd Marmor stated that pathologizing homosexuality was a way of justifying social discrimination against gays and society's intervention into the private lives of individuals (Scasta, 1998). While he was the president-elect of the American Psychiatry Association, homosexuality was removed from the DSM-II and replaced with Ego Dystonic Homosexuality. In 1986, as the current president-elect of the APA, Paul Fink recommended the removal of the Ego Dystonic Homosexuality diagnosis from the DSM-III entirely. Currently, instead of homosexual, the term gay is more widely used and implies not only same-sex behavior but also the capacity to establish intimacy within the context of a romantic relationship. Actually, one of the consequences of the shift in the views of same-sex behavior is the idea that being gay is more a matter of essence and identity than just behavior. As a result, the last forty years have witnessed the emergence of many developmental models to explain how an individual becomes gay.

#### **Developmental Models of Gay Identity**

With the removal of homosexuality as a mental disorder from the DSM-II in 1973, empirical research and conceptual articles have taken new directions (Cass, 1989). Both research and conceptual writings on homosexuality have been moving from an emphasis on etiology and treatment programs for "psychological adjustment" to an emphasis on describing the process of gay and lesbian identity development. Gay

identity development (or "coming out") is the process by which the individual accepts that "one's primary or predominant sexual orientation is gay in the context of a heterosexist and homophobic society" (Fassinger and Miller, 1996, p.54). In other words, it is the process by which the individual self-labels as gay (Cass, 1973). Developing a positive gay identity, also known as "coming out", is a lengthy developmental process with considerable variation depending on several factors, such as gender, race, ethnicity, social class, age and religion (Fassinger, 1991). Over the past 25 years, several models of gay/lesbian identity development have been proposed. One of the most cited models is Cass's (1979) Homosexual Identity Formation Model.

#### Cass's (1979) homosexual identity formation model.

Cass's (1979) Homosexual Identity Formation Model relies on two general assumptions. First, identity is acquired through a developmental process. Second, the stability of and the change in behavior is the outcome of the interaction between the individuals and their environments. More specifically, this model rests on the interpersonal incongruency theory. The basic unit of this model is the interpersonal matrix which consists of three elements: individual's own perception of the self (selfconcept), individual's perception of his/her own behavior as an outcome of the characteristics of the self, and the individual's perception of how other people see those characteristics. Accordingly, the gay identity develops from one stage to the other by means of achieving consistency between the three components of the matrix. Cass (1984) stresses that identity, self-concept, and perceptions are cognitive constructs. Still, her gay developmental model considers affective and behavioral components as well. Cass (1979) views the gay identity formation as a process in which the individual changes his/her interpersonal matrix from one that is congruently defined as non-gay to one that is defined as gay. Cass proposes six stages for gay identity formation (see Figure 1).



Figure 1. Developmental Stages of Cass's Homosexual Identity Formation Model

#### Identity confusion.

The first stage is identity confusion. The onset of this stage occurs when the individual labels his/her own behaviors as "possibly homosexual". This shifts the previously congruent interpersonal matrix to a state of incongruency. To resolve this confusion, the individual uses one of three approaches. If the gay behavior is perceived both as correct and acceptable, the person begins to change his/her perceptions about the self to make them more congruent with the new behavior. If the gay behavior is perceived as correct but undesirable, the person tries to restore the original interpersonal matrix by avoiding and denying all gay behavior and avoiding all sources of gay

information. Finally, if the gay behavior is perceived as both incorrect and undesirable, the person redefines this behavior as non-gay. Of all these approaches, the first one is the only one that forces the person into the next stage. The other two promote identity foreclosure. Because of this particular incongruity, this stage is characterized by confusion and turmoil as an outcome of questioning the previous perceptions regarding the sexual identity. "I doubt that I am homosexual, but still am confused about who I am sexually" and "I don't act like most homosexuals do, so I doubt that I'm homosexual" are assertions that can describe this phase (Brady & Busse, 1994).

#### Identity comparison.

The second stage is identity comparison. The turmoil and confusion of the first stage have reduced considerably because the person has accepted that his/her identity is gay. Still, with this acceptance of the self as gay, comes along a greater incongruence between the self and the other two components of the interpersonal matrix. As a result, the person experiences a sense of alienation. Basically, the person realizes that all the behaviors and rules related to heterosexuality are not applicable to him/her anymore. Yet these behaviors and rules have not been replaced by other congruent behaviors and rules. In this stage there are four approaches to dealing with the feelings of alienation. One of these approaches consists of devaluing the importance of others in order to lessen the impact of this component and, thus, reducing the incongruency. At the same time, the individual continues to present a public image of non-gay behaviors in order to avoid others' negative evaluation of his/her gay self (passing strategy). According to Cass (1979), there are four ways of passing: avoiding threatening situations, controlling personal information, deliberately presenting a non-gay image and role distancing

(detachment from gay situations). Individuals that adopt this approach usually act positively on the fact that they are different and perceive the related self and behavioral components as desirable. Accordingly, this approach helps the person to move to the next stage.

The second approach occurs when the individual accepts the meaning of his/her behavior as gay but finds it undesirable as a self-image. Accordingly, the person will try to change his/her perceptions about the self without trying to change the related behaviors. In this particular case there are four possible strategies: restructuring the meaning of the behavior as gay only in relationship to a particular person (special case strategy), perceiving the self as both gay and non-gay (ambisexual strategy), accepting the gay self-image as temporary (temporary identity strategy), and accepting the gay selfimage but refusing any responsibility for it (personal innocence strategy).

The third approach consists of accepting his gay self and the meaning of behavior as gay but, because of fear of social alienation, sees this behavior as undesirable. Accordingly, the person implements strategies to change the behavior: inhibition of all gay and non-gay behaviors and reducing the impact of others by social distance. Finally, the fourth approach occurs when the person perceives both the gay self and behavior components of the interpersonal matrix as undesirable and tries to change them both. Cass states that this is done by the inhibition of all gay behaviors, the devaluation of being gay and the positive view of heterosexuality. This promotes a greater sense of alienation that, in some extreme cases, could end up with suicide. These approaches stagnate the developmental process and promote identity foreclosure. "I probably am

sexually attracted to men and women" and "I don't feel as if I'm heterosexual or homosexual" are statements that can describe this stage (Brady & Busse, 1994)

#### Identity tolerance.

During this stage the person experiences more commitment to his/her gay self and behaviors. In order to deal with an increasing sense of alienation, the person seeks out other gays and the gay culture. Still, for the person this is viewed as something that needs to be done instead of something that he/she really wants to do. Cass (1979) explains that the individual tolerates rather than accepts his self and behaviors. These contacts with other gays can have positive or negative effects in the identity development. Then again, to understand these effects a distinction needs to be made between those who perceive both his/her gay self and behaviors as desirable components of their interpersonal matrixes and those who perceive the behaviors as desirable but not the gay self. The last group may still engage in using the strategies from the previous stage in order to make the gay-self component of the interpersonal matrix more desirable. However, rewarding contacts with gays that accept both his gay self and behaviors may challenge this perspective, moving the person toward a reevaluation of previously held negative perceptions of the gay self. This may lead to more commitment to a gay self. On the other hand, unrewarding contacts with other gays may lead to devaluation of the gay culture. In turn, this leads to reduction of contact with other gays and inhibition of all gay behaviors and further identity foreclosure. Through "mixing with the gay culture" (p.231) both groups have the opportunity to be in contact with some positive features as, for example, meeting a partner, a role model who represents gayness as acceptable, learn effective coping techniques to manage the gay identity, and practice of social skills

within a support group. If this is the case, by the end of this stage, commitment to a gay self-image has increased. ""I'm probably homosexual, even though I maintain a heterosexual image in both my personal and public life" are statements that describe this stage (Brady & Busse, 1994).

#### Identity acceptance.

The main feature of this stage is the increasing contact with other gays. These contact become more frequent because the person accepts rather than tolerates his/her gay self-image. By this point the individual has satisfactorily answered the questions about his/her essence (Who I am?) and belongingness. The main task that confronts the individual in this stage has to do with the restructuring of the interpersonal environment as a result of an increasing contact with the gay culture. At this point, the type of group the person relates with will influence his/her progress through the remaining stages. Cass (1979) establishes a difference between two types of groups: those that legitimize gayness privately and publicly and those that only legitimize gayness privately. The acceptance of the full legitimization accentuates the incongruency between how the person sees his/her gay self and how he/she thinks the others see it. The attempt to resolve this incongruency moves the person to the next stage. As for the partial legitimization of gayness (privately), it creates no tension because the emphasis is on keeping with the existing interpersonal matrix. The individual handles the situation by trying to "fit in" both with gay and non-gay established institutions. The person may use three strategies to deal with this incongruency: passing, limiting the contact with non-gay people that challenges his/her gay self-image and selective disclosure of his/her selfimage to people that will keep it a secret. As a result, the matrix remains unchanged and

foreclosure occurs. This situation implies a low incongruency and a positively formulated gay identity that can be satisfactory for some gays. "I live a homosexual lifestyle at home, while at work/school I do not want others to know about my lifestyle" and "Even though I am definitely homosexual, I have not told my family" are statements that describe this stage.

#### Identity pride.

This stage is marked by the incongruency between the person's own positive gay self-image and society's rejection of this concept. To deal with this incongruency, the person uses strategies to devalue the importance of others to his/her self-image and revalue gay others more positively. For these strategies to work, the individual dichotomizes the world into gays and non-gays. The individual attributes gay people credibility and sees them as significant, while seeing non-gays as lacking credibility and significance. The individual immerses in the gay culture and mixes with gay groups that share his/her same philosophy. Actually, the individual sees these groups as the only source of emotional fulfillment, as opposed to the non-gay structures, which remind him/her of non-gay values that do not fit the gay self-image. This conflict creates feelings of anger that are dealt with through activism. Disclosure is the main strategy during this stage. Cass (1979) points out that disclosure has two positive effects: it creates more situations where the person's gay identity is known and lends support to the gay self-image and aligns person's public identity with his/her private identity. If the reaction to this disclosure is negative, the person reaffirms his current interpersonal matrix and remains in the stage. On the other hand, if the person perceives positive reactions from non-gay people it creates an incongruency that moves the person to the

next stage. "I have little desire to be around most heterosexuals" and "I am not about to stay hidden as a gay for anyone" are statements that describe this stage.

#### Identity synthesis.

With the realization that the dichotomy of gay/non-gay world does not hold true, the person's incongruency is reduced. As a result, the individual's personal and public identities are synthesized into one self-image that receives support from the individual's interpersonal environment. In this stage, gayness is no more the only identity but just one aspect of the self. "I generally feel comfortably being the only gay person in a group of heterosexuals" and "I am openly gay and fully integrated into heterosexual society" are statements that describe this stage.

#### Empirical support for the Cass homosexuality identity formation model.

To test the validity of her model, Cass (1984) hypothesized that where individuals were allocated into homosexual identity formation stages, those at a particular stage would acknowledge the profile of that stage as the one that best describes their current functioning. Cass (1984) also hypothesized that " the degree of similarity or correspondence between an individual's current functioning and the various stage profiles would decrease progressively as a function of the distance of all other stages (as proposed by the model) from that to which the individual belonged" (p. 153). To test these hypotheses, Cass (1984) developed two instruments: the Stage Allocation Measure and the Homosexual Identity Questionnaire. The Stage Allocation Measure contains oneparagraph descriptions of every stage in the Homosexual Formation Identity Model. This measure enables the individual to allocate himself/herself in one of the stages by asking him/her to choose the description that best fits his current functioning. The Homosexual

Formation Questionnaire is composed of 210 multiple response items. Cass (1984) predicted how individuals at each stage of homosexual identity formation might respond on each item. Accordingly, predicted scores for each stage were grouped together to form six separate scoring keys. Cass's (1984) results indicate a distinction between four stages, instead of six. The lack of distinction between stages was most obvious between stages 1 and 2 and stages 5 and 6. However, a discriminant analysis indicated that the six stage groups could be adequately distinguished. To explain this inconsistency, Cass (1984) argues that the scoring keys were unable to measure adequately the differences between groups. Moreover, the method of stage allocation and the possibility of poor item construction, unclear predictions and incorrect theorizing might have affected the results (Cass, 1984).

Brady and Busse (1994) developed another questionnaire based on the Cass Homosexual Identity Formation Model (1979). Their questionnaire contains 45 true-orfalse items that are easy to score for the purpose of identifying a subject's stage of homosexual identity formation. In their study, 225 male subjects answered the questionnaire. The authors recruited this sample from a variety of sources: counseling and discussion groups for gay men, gay professional organizations, beaches, parks and gyms frequented by gay men and psychotherapy practice with predominantly gay male clientele. The questionnaire contained three items used as validity checks.

The findings support two of the three hypotheses. Positive significant relationships were found between stage of homosexual identity formation and psychological well-being and stage of homosexual identity formation and homosexual adjustment. No significant relationship was found between homosexual identity

formation and background characteristics (age, education, income, religiosity, political values). Regarding the validity of the model, the findings suggested a two-stage model. The first stage consists of stages 1,2 and 3 while stage two consists of the remaining three stages (i.e. 3, 4 and 5).

Halpin and Allen (2004) examined the relationship between gay identity development and psychosocial well-being using the Gay Identity Questionnaire (Brady & Busse, 1994). One of the aims of this study was to "explore an alternative approach to gay identity development, investigating a more dimensional concept of developmental stages" (p. 113-114). Halpin and Allen addressed the lack of subjects in the Cass's early developmental stages by recruiting a bigger sample of men who reported being attracted to other men (n=425) through Internet. They grouped the participants based on the highest score of the GIQ subscales and computed the mean age in each one of these groups. The researchers argued that the progressive increase in the mean age from the first developmental stage of identity confusion through the last one (identity synthesis) is evidence of the validity of Cass's model.

#### Limitations of previous models of gay identity development.

Cass's and all the previous models have been criticized because of four major flaws. McCarn and Fassinger (1996) stress the fact that these models do not differentiate between the development of an articulated gay identity within an articulated self and the development of minority group membership. All the models confound these two processes, using the first stages to describe the gay identity development and the later stages to address issues related to group membership. An outcome of this confounding is the assumption that public disclosure is always necessary to fully develop a healthy gay

identity. However this view of lack of disclosure as a developmental arrest fails to consider the diversity of social realities gay individuals face. It is known that cultural factors will determine the extent to which public disclosure and politicization of the gay identity occurs (Fassinger, 1991). Moreover, in some cultures and countries disclosure is not even an alternative, which does not necessarily mean that there is no room for developing a healthy gay identity. Grov, Bimbi, Nanin and Parsons (2006) have noted the importance of paying attention to the diversity of identity development among the LGBT population as it relates to the person's racial and ethnic background.

Another flaw of previous models has to do with its linearity. Most of these models rest on the assumption that the development of a healthy gay identity occurs within the context of a linear progression. This implies that developmental maturity depends on an immutable homoerotic identification that fails to recognize the possibility of alternative options, e.g. bisexuality (Fassinger, 1998; McCarn & Fassinger, 1996). This is incongruent with the widely accepted notion of sexuality and sexual identity as a flexible construct rather than a set of rigid and exclusive categories.

Finally, although these models claim to be relevant to both gay men and lesbians, most of them fail to acknowledge the fact that there are differences between gay and lesbian identity development. McCarn and Fassinger (1996) point out that gender differences regarding the expression of sexuality and masculine and feminine roles may represent differences in terms of how gay men and lesbians acquire their sexual identities.

#### McCarn and Fassinger's (1996) sexual minority identity formation model.

In an attempt to address these three limitations, McCarn and Fassinger (1996) have proposed a model of gay identity development. Contrary to previous models (Cass,
1979; Troiden, 1989), the Sexual Minority Identity Formation Model (McCarn and Fassinger, 1996) conceptualizes individual identity formation and the group membership formation as two different processes that consist of four recyclable phases: Awareness, Exploration, Deepening/Commitment and Internalization/Synthesis (see Figure 2 p.20).





#### Awareness.

During the awareness phase the individual experiences same-sex feelings and thoughts without self-labeling as gay. Individually, this phase starts with a general feeling of being different. This difference is perceived by means of same-sex feelings and thoughts that are quite different from the heterosexual norm. Still, the experience of these feelings and thoughts may not lead to self-labeling as gay or lesbian. In terms of group membership identity, the realization that nongay identity is not universal marks the onset on this phase. This initial awareness causes confusion because of the new realization of living under non-gay assumptions that do not fit the gay feelings and behaviors. Still, at this phase there is no awareness of the oppression entailed in this difference.

#### Exploration.

The exploration phase involves active questioning of these feelings and behaviors and exploration of sexual feelings and behaviors. During this phase, the individual develops positive attitudes toward the gay community but does not self-identify with the group. As far as the individual identity is concerned, this phase involves active questioning of the feelings and behaviors first noticed in the prior phase. Although it may involve exploration of sexual feelings, this does not necessarily translate to exploration of sexual behavior. This holds particularly true for women. In terms of the group membership, this phase is characterized by an attempt to define one's own position in relation to the gay reference group. The individual considers both his/her attitudes toward other gays and the possibility of belonging to the group. It is possible during this phase that an individual develops positive attitudes toward the gay community and yet does not self-identify with the group.

# Deepening/Commitment.

The deepening/commitment phase is characterized by "...the crystallization of some choices about sexuality" (McCarn and Fassinger, 1996, p.522). During this phase, the individual begins to self-label as gay and perceives the world as a dichotomy consisting of gay and non-gay cultures. Regarding the individual identity formation, the exploration about the same-sex feelings and thoughts leads to choosing same-sex relationships, other-sex relationships or both types of relationships. Accordingly, identity and intimacy become more congruent within the person. The commitment to a specific sexual identity poses an influence to the group identity process. A gay/lesbian group identity is assumed with both the awareness of oppression and the consequences of this choice. Personal involvement with the reference group best represents this commitment. As an outcome, the individual may experience feelings ranging from excitement and pride to rage and internal confusion resulting from the dichotomized worldviews, i.e. gays and nongays.

# Internalization/Synthesis.

Finally, during the internalization/synthesis phase, the individual has gone through a process of internal clarification that enables him/her to integrate his/her gay/lesbian/bisexual sexual identity into the overall self-concept. As a result, the individual feels comfortable belonging to the gay/lesbian community and being one across different societal contexts. In terms of individual identity formation, the individual experiences higher levels of self-acceptance related to his/her feelings of desire and love for same-sex partners. Regarding the group membership identity, during this phase the person abandons the dichotomized view of the world. At this point, individuals evaluate

people on an individual basis rather than using any stereotype. During this phase, the individual fully realizes the oppression related to his sexual identity and group membership. This does not mean that the person politicizes his/her situation. According to Fassinger (1996) and McCarn and Fassinger (1996), it is possible to start developing an integrated self-concept without making any disclosure. Still, the current societal rules promote the disclosure because of its demands on expressing our sexual identities through the fulfillment of certain roles, e.g. marrying, having children, etc.

# Empirical support for the McCarn and Fassinger's (1996) sexual minority identity formation model.

To obtain preliminary validity of McCarn & Fassinger's (1996) Sexual Minority Identity Formation, Fassinger and Miller (1996) conducted a Q-sort study with a sample of 34 gay men from diverse ages, races, educational, occupational and socioeconomic backgrounds. The Q-sort method consists in asking the sample to sort a series of items in a specific number of predetermined categories. In this study, the participants were instructed about the Sexual Minority Identity Formation Model (McCarn & Fassinger, 1996) before sorting 40 items into the two parallel processes (individual sexual identity and group membership identity) and the four phases (awareness, exploration, deepening/commitment and internalization/synthesis) of the model. Besides answering a demographic questionnaire, the participants were asked to select the 10 items that best described them at the moment of the study. The authors proposed three hypotheses. The first hypothesis was that the participants would be able to distinguish the two branches of the model. The second and third hypotheses were that the participants would be able to distinguish the four phases in each one of the branches of the model. These hypotheses were tested by means of the proportion of agreement between participants and the hypothesized model on the location of items. The results suggest strong support for the Sexual Minority Identity Formation Model, particularly the distinction between individual sexual identity and group membership identity. The distinction between phases two and three in the group membership branch of the model was less clear. To explain this finding, the authors argue that inadequate wording on some of the items and diversity in the developmental paths taken by individuals into the gay/lesbian community. Fassinger and Miller (1996) emphasize that an easily administered measure of gay identity development would facilitate the testing of the model, its reliability and validity as well as the relationship of gay identity development with other phenomena.

## **Model Specification**

The purpose of the current study is to elaborate on Fassinger and Miller's (1998) results by testing the phases of Awareness in both the Individual Identity and Group Membership processes. This partial testing consists in piloting two scales containing twenty items, including the ten items used by the previous authors. The pilot study addresses issues of validity based on Messick's (1995) framework and uses Structural Equation Modeling (SEM) analyses instead of the frequency analyses used in the Q-sort study of Fassinger and Miller's (1998). SEM's goal is to determine the extent to which the theoretical model is supported by sample data." (Schumaker & Lomax, 2004, p. 2). SEM has grown popularity over the past decades due to three major advantages. First, it allows complex phenomena to be statistically modeled and tested. Second, it takes measurement error into consideration while statistically analyzing the data. Third, the maturity of its techniques increases the capacity to analyze more advanced SEM models.

SEM analyses follow a logical sequence of five steps: model specification, model identification, mode estimation, model testing and model modification. Model specification is the first step and consists of using relevant theory research and information to develop a theoretical model. Similarly, Messick refers to the external validity model as the relationship between the latent variable under study and other similar (convergent validity) and dissimilar (divergent validity) constructs. The theoretical model comprises various variables and the expected relationships among them. Accordingly, the external model of gay identity includes three variables in the model specification process: self-concept, psychological well-being and racial identity. Decisions about the inclusion of these constructs in the external model were guided by published scarce empirical evidence and solid conceptual arguments. Figure 3 (page 3) represents the relationship of these constructs with gay identity.

#### Gay identity and self-concept.

Although, they may be used indistinctively, self-concept and identity are not synonyms. Self-concept refers to "what one thinks one is like" (Troiden, 1984, p. 100). Self-concept is the set of beliefs about one's personal qualities and typical behavior whereas identity refers to a "unified, purposeful aspect of self and hence is only part of the self-concept" (Frable, 1997). A multidimensional approach defines self-concept as a multidimensional construct that comprises six areas: likeability, task accomplishment, power, vulnerability, giftedness and morality (Stake, 1994). The self-concept contains many identities the salience of which varies over time and across situations. Identity refers to "organized sets of characteristics an individual perceives as definitely representing the self in relation to a social situation (imagined or real)" (Troiden, 1984).

Troiden (1984) argues that self-concept is "broader in scope" and includes more categories than identity, which is more limited and involves categories only relevant to particular situations. Therefore, an individual may have multiple identities but only one self-concept. Larson (1985) conducted a study to examine the relationships between gender, social sex roles and sexual orientation as the three components of sexual identity and the relationship of these components to the overall self-concept. The sample of 160 subjects answered and returned a research packet containing the Bern Sex Role Inventory (BSRI) and the Tennessee Self Concept Scale (TSCS). Four groups were compared: gay men, lesbians, straight men and straight women. The findings suggest an interaction in the relationship of gender and sexual orientation to self-concept. However, sexual orientation alone did not translate to significant differences in self-concept. These findings support Troiden's arguments regarding the relationship between gay identity and self-concept. According to both theoretical arguments and the scarce research findings, no significant relationship is expected between gay identity and self-concept. However, for the purpose of this study, self-concept was included in the model to test its relationship with the gay identity measures as a way of establishing divergent validity.

#### Gay identity and psychological well-being.

Ryff and Keyes (1995) define psychological well-being as positive functioning in six areas: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. Self-acceptance regards the general attitude toward the self, acknowledgement and acceptance of good and bad aspects of the self and feelings about past life. Positive relations with others comprises the nature and number of relationships with others, caring about the welfare of others, empathy, affection and

intimacy. Autonomy is characterized by self-determination and independence, ability to resist social pressures to think and act in certain ways, behavior auto-regulation and personal standards to evaluate the self. Environmental mastery is the degree to which an individual can manage his environment to create contexts that satisfy his needs and values. Purpose in life is defined by a sense of meaning in past and present life and the presence of goals for the future. Finally, personal growth is the sense of continued development, openness to new experiences and a sense of realizing the individual's full potential.

Since the late 60's, research findings on gay identity have revealed not only that gay individuals can be as psychologically well-adjusted as their heterosexual counterparts but also that positive gay identity development was associated with psychological wellbeing while internalized homophobia is a risk factor for depression, anxiety and suicide (DeLuca, 1967; Dunkle, 1994; Hooker, 1965; Halpin & Allen, 2004; Igartua, Gill & Montoro, 2003; Kertzner, Meyer & Frost, 2009; Miranda & Storms, 1989; Sagir, Robins, Walbran & Gentry, 1970; Szymanski & Gupta, 2009). This relationship can be explained by means of the role of each one of Ryff and Keye's (1995) dimensions in both psychological well-being and the healthy development of a gay identity in an individual. McCarn and Fassiger's (1996) model explains the process by which the individual selflabels as gay. Underlying this process is the assumption that, regarding the individual identity developmental process, the more the individual accepts himself as a gay, the more developed his gay identity will be. Along the same lines, one of the indicators of group membership identity development is the nature of social relationships. The more the individual is able to relate with people of every sexual orientation, the more

developed his sense of group identity is, which suggests the presence of positive relationships with others that nurture his psychological well being. In terms of autonomy, McCarn and Fassinger (1996) describe a gay man in the Internalization/Synthesis phase as an individual that evaluates people and situations on an individual basis rather than using common stereotypes, which suggests the ability to be self-determining and independent. Similarly, being comfortably gay across different social contexts suggests the ability of making effective use of the surrounding opportunities, which is characteristic of individuals with high levels of environmental mastery. Regarding personal growth, McCarn and Fassinger's model implies that with the development of gay identity comes a higher degree of self-knowledge and an openness to new experiences that is characteristic of high levels of personal growth. Finally, it is not farfetched to think that the internal clarification process essential to the development of a gay identity may result on higher levels of purpose in life, as it may give sense to past and present life, as well as provide useful guidance for the future. Therefore, a positive relationship is expected between gay identity and psychological well-being.

## Gay identity and racial identity

Most models of gay identity development rely on the assumption that to be fully developed, gay men and lesbians have to publicly acknowledge their sexual orientation. This process, usually known as coming out, assumes the importance of individualism, independent identity and separation from the family as important requisites of growing up (Smith 1997). Along the same line, many researchers and theorists have assumed that coming out is a desired end while suggesting that failure to come out implies resistance, self-hatred, shame and embarrassment (Grov, Bimbi, Nanin & Parsons, 2006).

Consequently, not disclosing the sexual orientation is considered a sign of arrested development. However, coming out has been described as a "White, Western, middleclass phenomenon" (Estrada & Rutter, 2006; Smith, 1997) because it does not consider the fact that other cultures rely more on the importance of family and interdependence as indicators of healthy development. Factors as race and ethnicity may interact with the coming-out process (Grov et al., 2006; Rosario, Schrimshaw & Hunter, 2004). In some cases, disclosure of gay sexual orientation to a family member is a challenge to ethnic minority families, who are not used to discussing sexuality matters and prefer to assume a heterosexual orientation. For example, tolerance or acceptance of same-sex feelings has been noted in many instances among African-American communities, however this acceptance comes with an implicit agreement of not disclosing or displaying the sexual orientation (Crawford, Allison, Zamboni & Soto, 2002; Jamil, Harper and Fernandez, 2009). As a result, many African-American gay men lead a compartmentalized life, monitoring what they reveal about themselves within their ethnic community while seeking out the European-American gay community to express their gay sexual orientation. In a case discussion, Estrada and Rutter (2006) explained the importance of family loyalty in Puerto Rican families, the highly valued sense of family respect that implies a willingness to sacrifice oneself for the welfare of the group and its implication in the coming out process. For Puerto Rican families with traditional cultural norms coming out as gay or lesbian is indeed a transgression that may be viewed as a blow to the family reputation (Estrada & Rutter, 2006; Mohr & Fassinger, 2003). However, ethnic minority gay LGBT individuals have reported race-based discriminatory treatment within the latter (Adams & Kimmel, 1997; Greene, 1997; Harper, Jernewall & Zea,

2004). Consequently, LGBT individuals from ethnic minorities may experience conflicting loyalties to two communities that marginalized them for different reasons (Crawford et al., 2002; Goode-Cross & Good, 2009). The scarce research findings on the interphase of these two identities suggest that attachment to cultural heritage and identity as an ethnic minority are most important for emotional health and well being (Crawford et al., 2002). Accordingly, it is expected to see differences in how individuals from different ethnic backgrounds decide to disclose their sexual orientation. More specifically, it is expected that White men will be more inclined to publicly disclose their sexual orientation and participate more actively in LGBT groups, while gay men of color identified with their own ethnicity will not necessarily engage on public disclosing of their sexual orientation. Still, according to McCarn and Fassinger's model, the lack of public disclosure does not necessarily mean lack of psychological adjustment. Therefore, this researcher expects a stronger positive relationship between ethnic identity and gay individual identity formation when compared with the relationship between ethnic identity and gay group membership among gay men located in the Synthesis phase.

#### **Research Questions and Hypotheses**

Although the shift in the attitudes toward gayness have resulted in many developmental models that attempt to explain gay identity, empirical findings to support these theoretical models is at best scarce and inconclusive. Most of these models were developed based on the experience of the Middle class White male and failed to consider the interaction of multiple identities among people of color. Furthermore, the majority of these models assume that gay identity is a unidimensional construct that can be conceptualized as a series of discreet stages arranged in a specific order. The purpose of

this study is to pilot two scales purported to measure high gay individual identity and group membership according to McCarn and Fassinger's Sexual Minority Identity Formation Model. This study intends to evaluate the validity of these scales according to Messick's perspective on validity while using structural equation modeling statistical analyses. Accordingly, these are the research questions and hypotheses:

- 1. Are the items reliable and precise enough to grant further development of the items for research and clinical uses?
- 2. Is gay identity a bidimensional construct that comprises individual identity formation and group membership formation?
  - a. Hypothesis 1: Significant differences will be observed between the scores of the Gay Individual Identity Synthesis Scale (GIISS) and Gay Group Membership Synthesis Scale (GGMSS).
- 3. Do the responses to the items correlate with other constructs in a manner that is consistent with the external model?
  - a. Hypothesis 1: No significant relationship will be observed between the scores of the Gay Individual Identity – Synthesis Scale (GIISS) and the Gay Group Membership – Synthesis Scale (GGMSS) and the scores of the Six-Factor Self-Concept Scale.
  - b. Hypothesis 2: A significant positive relationship will be observed between the responses to the items included in the Gay Individual Identity – Synthesis Scale and the Psychological Well Being Scales.

- c. Hypothesis 3: A significant positive relationship will be observed between the scores of the Gay Group Membership – Synthesis Scale and the Psychological Well Being Scales.
- d. Hypothesis 4: Differences in the scores on the Gay Group Membership –
   Synthesis Scale will be observed based on the scores in the Multigroup
   Ethnic Identity Measure.
- 4. Do the correlations between the responses to the items and other constructs exhibit significant differences based on ethnicity?
  - a. Hypothesis 1: A stronger positive relationship will be observed between the scores of the Individual Identity – Synthesis scale and ethnic identity when compared with the relationship between the responses to the Group membership – Synthesis Scale and ethnic identity among gay men of color located in the Synthesis phase.





Figure 3. External Model

#### **CHAPTER II**

#### Methodology

The methodology includes the developing process of the Gay Individual Identity – Synthesis and the Gay Group Membership – Synthesis scales as well as the data collection procedures and the data analyses conducted to answer the research questions and test the research hypothesis.

#### Instrumentation

To develop the Gay Individual Identity – Synthesis and the Gay Group Membership – Synthesis scales, the first step was the instrumentation. The instrumentation consists of the identification of the universe of potential indicators and the process of content and substantive sampling from this universe of indicators.

#### Universe of potential indicators.

The scarce research on gay identity development has argued that gay identity development can be observed through a definite set of dimensions. For example, Cass (1979) proposed 16 dimensions to test her theoretical model of Homosexual Identity Formation: commitment, disclosure, generality, identity evaluation, group identification, social interaction, alienation, inconsistency, sexual orientation activity, acculturation, deference to others, dichotomization, personal control, strategies, personal satisfaction and professional contact. The main assumption is that cognitive, behavioral and affective changes in these dimensions reveal the progression of an individual through the stages of gay identity development. However, it is important to emphasize that most of the gay identity models assume certain cultural homogeneity among LGBT individuals and fail to consider the diversity within the community. Therefore, establishing a set of dimensions

that are too specific might leave out of the equation a significant part of the LGBT community.

Another way of approaching this problem is focusing on the context in which gay identity development occurs. Following other developmental models, we can assume that gay identity development occurs within the context of the individual relationship with himself/herself, his/her family, friends, coworkers and society at large. Accordingly, the individual will develop certain cognitions, attitudes, feelings and behaviors that tap into his current phase. Furthermore, this approach allows for a more flexible model of development as opposed to restricted developmental stages. Messick's (1993) substantive validity refers to the observed consistencies in the responses based on theoretical process models of task performance supported by empirical evidence. Accordingly, the current model proposes that the construct of gay identity can be observed through self-reported information about behaviors, feelings, cognitions and attitudes toward gays and nongays. Therefore, the individual exhibits a cluster of feelings, behaviors, cognitions and attitudes that are related to both the group membership and the individual identity development processes. This is a departure from McCarn and Fassinger's (1996) model. These authors proposed a model that separates these two processes. However, they argue that group identity formation is observable only through attitudes of the individual toward gays and nongays whereas the individual identity formation is observed through homoerotic desire in the context of relational identity (i.e. who I choose as a sexual partner). Figure 3 represents the relationship between gay identity, individual identity formation, group membership identity and their related feelings, behaviors, cognitions and attitudes.

To summarize, gay identity development is operationally defined as the process by which an individual, in the context of the relationship between him and his environment, acquires a set of cognitions, attitudes, behaviors and feelings that differentiates him from individuals that hold and display heterosexual, or "straight", views and behaviors. This internal model is depicted in Figure 4.





## Content sampling and substantive sampling.

The process of content sampling consists of identifying and choosing the contents (indicators) based on which the items for a particular instrument will be elaborated. Both the GISS and the GMSS assume that the Individual Identity Synthesis and Group Membership Synthesis Formation phases of gay identity development are observable through individual's same-sex feelings, behaviors, cognitions and attitudes. However, these feelings, behaviors, cognitions and attitudes are not restricted to the individual's romantic/sexual relationships. They also include other types of relationships: family, friendships, community participation, etc. Based on this operational definition, this researcher elaborated a list of 17 potential indicators of gay identity development (see Table 1), based on personal experience and the stage descriptions of previous gay identity developmental models (Cass, 1979; McCarn & Fassinger, 1996; Troiden, 1989). Table 1 contains these indicators. These indicators represent potential areas based on which specific items about the synthesis phase in Individual Identity and Group Membership formation could be elaborated.

# Table I

# Potential Indicators of Gay Identity

Financial and time constraints made it impossible to measure all the potential indicators. Therefore, four indicators were selected: general same-sex cognitions, general same-sex feelings, same-sex behaviors and attitudes. These indicators were chosen for two reasons. First, they can encompass the rest of the indicators. Furthermore, they are congruent with the internal model of the construct of gay identity. Secondly, these domains are conventionally used to measure psychological constructs like identity and self-concept. Other constructs (e.g. intelligence, academic performance) may have a greater and more varied universe of potential indicators. However, gay identity is a construct with psychological, historical, political and sociocultural dimensions that cannot be measured by other means than collecting information about what LGBT individuals think and feel about their sexual orientation and how this influences their same-sex-related attitudes and behaviors.

The next step was to determine the relative weight of each selected indicator in both Individual Identity Synthesis and Group Membership Synthesis phases. The relative weight of each indicator guides decisions regarding the number of items per indicator to be included in a measurement instrument. Usually these weights are expressed in terms of the percentages of a specific indicator's items within the total items of the instrument. In some instances, decisions about the given weight of an indicator may reflect its importance to the general construct. However, the published literature on gay identity development does not establish that any indicator should be more important than the others. Decisions about indicators' weight seemed to be based on pragmatic issues and tend to result in an even distribution of number of items across indicators. Regarding the development of the Gay Individual Identity – Synthesis Scale and the Gay Group Membership – Synthesis Scale the differences in the number of items per indicator should not be assumed as a reflection of the relative importance of each indicator. These differences are rather the result of pragmatic decisions. Each one of these scales includes 5 items tested in Fassinger and Miller (1996) Q-sort study and 5 additional items developed by this researcher to address the lack of representation of certain indicators in McCarn and Fassinger's items. The intention was to have ten items per scale. Since none of the indicators is more important than the others, this researcher decided to give each one of the four indicators a relative weight of 25%. However, 25% of ten items is 2.5 items, which is not possible. Therefore, this researcher decided that each indicator would

have at least a weight of 20%, that is, two items per indicator, taking into consideration that some of the indicators could be represented by more than two items. Table 2 summarizes the weights of the four indicators in the Synthesis phases of Individual Identity Formation and Group Membership Formation.

## Table II

Indicator	Individual Identity – Synthesis Phase	Group Membership – Synthesis Phase
Same-sex feelings	30%	20%
Same-sex cognitions	30%	20%
Same-sex attitudes	20%	30%
Same-sex behaviors	20%	30%

Relative Weight by Indicator in GIISS and GGMSS

The table indicates that the indicators same-sex feelings and same-sex cognitions would be represented by more items than the indicators same-sex attitudes and same-sex behaviors in the Individual Identity Formation-Synthesis phase, while the opposite would be true for the Group Membership Formation – Synthesis phase.

The next step was to establish the limits of the universe of admissible evidence, which consists in the type of observations that the items will report. The universe of admissible evidence for gay identity is very restricted. Two general options are selfreport information (i.e. the subjects reports how he/she feels, what he/she thinks, what are his/her attitudes and what he/she does) and direct observation by the researcher of behaviors that may reflect subject's feelings, cognitions and attitudes. Therefore, the only admissible evidence in this case is self-report information. As it was stated earlier, selfreported same-sex feelings, cognitions, attitudes and behaviors will describe the Synthesis phases in both Gay Individual Identity and Gay Group Membership formation processes.

#### **Item Development**

After determining the universe of potential indicators, content sampling and substantive sampling, the next step was to create the blueprint of the GIISS and GGMSS. To elaborate this blueprint the researcher used a matrix consisting of four rows for the selected indicators (same-sex feelings, same-sex, cognitions, same-sex-attitudes and same-sex behaviors) and two columns for the Gay Individual Identity Synthesis phase and the Gay Group Membership Synthesis Phase. The blue print for the Internalization/Synthesis phase of the model resulted in a matrix of four dimensions (i.e. feelings, cognitions, attitudes and behaviors) per two processes (i.e. Individual Identity Formation and Group Membership Development). This researcher placed the items tested by Fassinger and Miller (1996) in the blueprint matrices. These items come from a 97item pool initially developed for testing the complete model on a sample of lesbians. Two pilot studies were conducted using female expert raters to reduce and refine the item pool. The final item pool included 48 items. For their study with a male sample, Fassinger and Miller used the same 97-item pool. The items were reworded for appropriateness for gay male sample. Five male raters (mental health professionals with expertise in LGBT issues) sorted the items in two piles representing the individual and the group membership formation processes. Then the raters were asked to sort each pile in four groups representing the four developmental phases (i.e. awareness, exploration, deepening/commitment and internalization/synthesis). Frequencies were tabulated for placement of items in each one of the eight groups. The results were analyzed based on

inter-rater agreement. The final item pool included 40 items that were tested with the gay male sample. Ten of these items were included in the current study to test the Internalization/Synthesis phase of the model and were placed in the matrix of the GIISS and GGMSS.

Once these items were placed in the blueprint matrices, this researcher wrote additional items to fill in the empty cells of the indicator matrix for a total of 20 items. According to the given weights of the indicators, this researcher determined the number of items per indicator based on the total of ten items per scale (GIISS and GGMSS). Table 3 presents the number of items per indicator in both the GIISS and the GGMSS. Table III

Indicator	Gay Individual Identity – Synthesis Scale	Gay Group Membership – Synthesis Scale
Same-sex Feelings	3	2
Same-sex Cognitions	3	2
Same-sex Attitudes	2	3
Same-sex Behaviors	2	3
Total	10	10

Number of Items in GIISS and GGMSS

To establish content and substantive validity, the written items were distributed in a way that each indicator in each scale was represented by, at least, two items (20%).

#### **Expert review revision.**

Once the items were elaborated and placed in the blueprint, three mental health professionals with expertise in LGBT issues reviewed these items for grammatical and content appropriateness. They were provided with the blueprint of the GIISS and the GGMSS as well as with a detailed description of the Gay Sexual Minority Formation Model (McCarn & Fassinger, 1996). The experts were asked to identify not only grammatical errors but also offensive language and determine if the items reflected the phases they were purported to describe. Two items were revised to avoid grammatical errors. One item was revised to discard offensive language because it could be read as if sexual orientation were not important at all. Two items were deleted and substituted by two new items to avoid psychological jargon. Table 4 summarizes these revisions.

# Table IV

# Expert Review Revisions of GIISS and GGMSS

Deleted Items				
Scale	Indicator	Items		
GIISS	Cognitions	"Being gay is part of my overall identity."		
GIISS	Cognitions	"Being gay is part of who I am as an individual."		
Added Items				
Scale	Indicator	Items		
GIISS	Cognitions	"Loving and being sexual with men is part of who I am."		
GIISS	Cognitions	"Loving and being sexual with men is part of how I see myself."		
Revised items				
Scale	Indicator	Items		
GGMSS	Cognitions	"When I meet someone I don't think solely of him in terms of his sexual orientation." instead of "When I meet somebody, I don't tend to think of him in terms of his sexual orientation."		
GGMSS	Cognitions	"Being gay or straight is one central part of who people are." instead of "Being gay or heterosexual is one part of the overall identity."		

Table V presents the final item placement per indicator in each subscale after all the expert revisions were incorporated.

# Table V

Indicator	GIISS	GGMSS
Same-sex feelings	<ul> <li>"I feel a deep contentment about my love for other men." *</li> <li>"I love and appreciate myself as a gay man." *</li> <li>"I don't feel guilty about my attraction to and love for other men."</li> </ul>	"I still get angry at the way homosexuals get treated, but not as much as once I did." * "I feel comfortable interacting with both straight and gay people."
Same-sex cognitions	"I feel proud of being gay as I am proud of other aspects/characteristics of me." "Loving and being sexual with men is part of who I am." Loving and being sexual with men is part of how I see myself."	"Being gay or straight is one central part of who people are." "When I meet somebody, I don't tend to think solely of him in terms of his sexual orientation."
Same-sex attitudes	"My love for men is an important part of me but, it is not the only thing that defines me." * "Being in a relationship with another man is important to me, but it is not the only thing that defines me."	"Some heterosexuals are homophobic, some are not." <b>*</b> "I enjoy having straight and gay friends." "I think is important for me to get along with straight and gay people."
Same-sex behaviors	"I have successfully incorporated my love of men into my life." * "I'm doing what I want to do in terms of love and sex; that makes me feel more integrated as a person." *	"I can relate comfortably to gays and nongays." * "I rely on my gay/lesbian friends for support but have some good heterosexual friends as well." * "I am a member of the gay community." *

# GIISS and GGMSS Item Placement Per Indicator

\*Items by Miller & Fassinger (1996)

The Gay Individual Identity – Synthesis Scale (GIISS) and the Gay Group Membership – Synthesis Scale (GGMSS) are two of the eight subscales of the Gay Identity Inventory, an instrument this researcher is developing. The scores of the Gay Identity Inventory will be interpreted based on a criterion frame of reference. The purpose of the measure is to classify individuals according to their phase of gay identity development in two different processes: group identity formation and individual identity formation. Therefore, each score will represent the individual's relative position within each one of these processes. Furthermore, theory supports the idea of gay identity development as a process that can be unique for individuals even within the same identifiable group (e.g. gender, age intervals, and ethnic identity). Thus the results will only show the person's relative position on gay individual identity and gay group membership rather than providing any indication of how he scored relative to other people.

#### **Data Collection**

Once the revisions were incorporated in the GIISS and the GGMSS, this researcher started the process of data collection.

#### Sample.

The targeted population of the study is gay men from different ethnic and race backgrounds living in United States who are fluent in English. A sample of 110 gay men from diverse cultural backgrounds was recruited through posts in LGBT-related web pages, blogs and diverse web groups in three major Internet search engines. Data collection was completed by February 2007.

#### **Procedures.**

This researcher used the services of the commercial online survey creator <u>www.createsurvey.com</u> to develop a web-based questionnaire. Recruiting e-mails were sent to listservs of gay men through different associations and groups in the United States and advertisements of the study were posted in LGBT chat rooms. The e-mails and advertisements introduced the researcher as an openly gay graduate student conducting a study the purpose of which is to develop an instrument to measure gay identity development. The advertisements explained that the researcher was interested in examining how gay identity is related to how gay men think and feel about themselves. It was further explained that this data would provide therapists and other mental health professionals with valuable information that would foster increased sensitivity toward their gay clients. The advertisements emphasized that participation in this study will be held strictly confidential. Finally, it stated that participants would have the opportunity to enter in a raffle for cash prizes and provided a link to the website for the study.

A link in the e-mails and advertisements connected to the study's informed consent. This consent form guaranteed that participation in the study would be entirely voluntary, that their responses would be held confidential, and that they had the right to withdraw from the study at any moment. The informed consent page asked the participants to choose between agreeing to participate by proceeding to the questionnaires pages or leaving the website. Once the participants completed the questionnaires, they were directed to a separate website to provide their e-mail address in order to enter in a raffle with three \$50 cash prizes. The participants' contact information was kept separate from their responses without the possibility of any association and the raffle drawing was

conducted after data collection was completed. The prizewinners received e-mails stating that they had won one of the prizes and explaining that they would receive their checks, along with a receipt form, at the provided mailing addresses. The winners were asked to sign the receipt form and sent it to the researcher in a pre-stamped envelope to verify that they received their prizes. This researcher sent three emails to winners of the raffle. One of the emails bounced back and an additional email was sent to another participant. After two weeks and a reminding email, none of the winners reclaimed their prizes. This researcher chose three other participants and sent the emails informing about the winning prize. The prizes remained unclaimed.

This researcher chose the web-based design to collect data because its advantages seemed to ensure the participation of a bigger sample. Overall, five advantages have been noted regarding the use of web-based designs over traditional paper-and-pencil methods (Hsu, 2005). First, the physical absence of the researcher eliminates the implied demand for the participants to remain in the study against their true wishes. As a result, the participants can exert more freedom in withdrawing from the study. Second, the privacy that a web-based design provides tends to decrease proneness to social desirability in the participants. This is particularly important with the LGBT community as some of their members and potential participants have not yet come out. This has been a problematic issue for research on gay identity development as samples are mostly constituted by men and women that have already engaged in some public disclosure of their sexual orientation. Furthermore, some of the members of the LGBT community that have already come out may find themselves sanctioning items in a way that is desirable to the LGBT community even though that may not reflect their true attitudes, behaviors,

feelings or cognitions. Therefore the privacy that a web-based design provides may foster more accurate responses from the participants. Third, difficult access to certain subjects (e.g. gay men that have not come out of the closet yet) can be reduced through the use of a web-based design. Fourth, the sample recruited through internet is potentially more representative of the population than the samples recruited at specific LGBT organizations. Fifth, a web-based design increases the possibility of obtaining a larger sample size, which results in the decrease of Type II error rate and an increased power.

Even though the web-based design has many advantages for the current study, it is not immune to limitations. One of these limitations is that the conditions under which the participants complete the survey are uncontrolled. They may complete the survey while at work, between meetings or while engaging in another activity at home. Another limitation is that the sample could be biased as it requires ownership or, at least, some access to a computer.

#### Instruments.

The website contained the following instruments: A demographic questionnaire, the Gay Individual Identity – Synthesis (GIISS) and the Gay Group Membership – Synthesis (GMSS) scales, the Gay Identity Questionnaire (Brady and Busse, 1994), Six-Factor Self-Concept Scale (Stake, 1994), Scales of Psychological Well-Being (Ryff, 1996) and the Multigroup Ethnic Identity Measure (Phinney, 1992). The instruments are self-report measures that the participants can answer with little help.

Gay Individual Identity – Synthesis Scale (GIISS) and the Gay Group Membership – Synthesis Scale (GMSS). These are the instruments that were piloted. The scales are self-report measures based on McCarn and Fassinger's (1996) Sexual Minority Identity Formation Model. The GIISS and the GGMSS are actually subscales of the Gay Indentity Inventory (GII), a larger instrument under development that targets the complete McCarn and Fassinger gay identity developmental model. Each one of the scales included 10 items that represent the Deepening/Synthesis phase in the individual gay identity and the gay group membership processes, respectively. To answer every item, the individual used a 4-point Likert scale where 1 means strongly agree, 2 means agree, 3 means disagree and 4 means strongly disagree. Once the individual completed the scales, the answers to each item in each phase subscale are summed. Higher scores indicated that the person's current gay identity developmental phase is internalization/synthesis.

#### Gay Identity Questionnaire (Brady & Busse, 1994).

The Gay Identity Questionnaire (GIQ) is a self-report measure that is based on the tenets of Cass's (1979) Homosexual Identity Formation Model. The measure consists of 45 true-or-false items: 42 items used to assign individuals to one of the six stages of Cass's (1979) model and three items to verify that the individual has same-sex feelings, thoughts or behavior. For each item that the individual marked true, one point was accrued in the stage of HIF represented by the item. Items marked false were scored with a zero. The subset of items in which the individual obtained the most points is his stage designation. Inter-item consistency scores for the GIQ were obtained using the Kuder-Richardson formula. For the items representing stage three (Tolerance), r = .76; for the items representing stage four (Acceptance), r = .71; for the items representing stage five (Pride), r = .44 and for the items representing stage six (Synthesis), r = .78. Since the

authors were not able to recruit enough individuals for the first two stages of the model, interitem consistency scores were not obtained. The GIQ was included in the model as one of the instrument variables to measure gay identity as a latent variable and was used to establish convergent validity of the piloted scales (GIISS and GGMSS).

#### Six-Factor Self-Concept Measure (Stake, 1994).

The Six-Factor Self-Concept Scale (SFSCS) is a multidimensional self-report measure of adult self-concept that has applicability across a wide range of life settings, roles and activities (Stake, 1994). The measure consists of six subscales, each one measuring one dimension of self-concept: Likeability, Morality, Task Accomplishment, Giftedness, Power and Vulnerability. The scale has a total of 36 items that are scored on a seven-point scale that ranges from "never or almost never true for me" to "always or almost always true for me. After six weeks, the test-retest coefficient for the composite score was .97, whereas the coefficients for the subscales ranged from .68 (Vulnerability) to .85 (Power and Task Accomplishment). A higher correlation of the measure with a measure of self-esteem than with a measure of social desirability provided evidence of convergent and discriminatory validity. Stake's Self Concept Scales were included in the model to establish divergent validity of the GIISS and the GGMSS. The proposed model tested a correlation between the latent variables gay identity and self concept. Since Ryff (1995) proposed self-concept as a multidimensional construct, the six subscales were included as six different instrument variables of self concept as a latent variable.

# Scales of Psychological Well-Being (Ryff, 1989).

The Scales of Psychological Well-Being (PSWB) are based on six dimensions that are related to positive functioning: self-acceptance, positive relations with others,

autonomy, environmental mastery, purpose in life and personal growth. Each scale consists of 14 items, equally split between positive and negative items. Items are scored on a six-point scale ranging from strongly agree to strongly disagree. Internal consistency coefficients for the scales range from .82 to .91 (Kafka & Kozma, 2002; Ryff, 1989; Ryff & Scmutte, 1997). Ryff's Scales of Psychological Well-Being were included in the model to establish convergent validity of the GIISS and the GGMSS. Given the fact that the scarce research on gay identity has suggested a link between gay identity development and psychological well-being, the proposed model included a structural equation where gay identity is an independent variable and psychological well-being is a dependent variable. Since Ryff (1995) proposed psychological well-being as a multidimensional construct, the six subscales were included as six different instrument variables of psychological well-being as a latent variable.

#### Multigroup Ethnic Identity Measure (Phinney, 1992).

The Multigroup Ethnic Identity Measure (MEIM) is a self-report measure based on the elements of ethnic identity that are common across groups, so it can be used with all ethnic groups. The measure consists of 14 items that assess three aspects of ethnic identity: positive ethnic attitudes and sense of belonging (5 items), ethnic identity achievement (7 items) and ethnic behaviors and practices (2 items). The questionnaire also includes six items that assess other-group orientation. The items were rated on a four-point scale that ranges from strongly agree to strongly disagree. Scores were computed by reversing negatively worded items, summing across items and obtaining the mean. Scores range from 4 (high ethnic identity) to 1 (low ethnic identity). The overall reliability of the measure ranges from .81 to .90 (Phinney, 1992). The reliability

coefficients for the subscales range from .69 to .86. No coefficients were calculated for the ethnic behaviors subscale because reliability cannot be computed with two items. Phinney's Multigroup Ethnic Identity Measure was included in the model to establish convergent validity of the GIISS and the GGMSS. Given the fact that the scarce theoretical papers published and qualitative studies on gay identity and ethnic identity have suggested a link between these two constructs, a structural equation was included in the model. Even though Phinney (1992) did not explicitly address ethnic identity as a multidimensional construct, the structure of the MEIM suggests that general ethnic identity has four dimensions: sense of belonging, ethnic identity achievement, ethnic behaviors and other-group orientation. Therefore, this researcher included each subscale as an instrumental variable to the latent variable ethnic identity.

Table VI summarizes the instruments used in this study and its correspondence to the latent variable.

# Table VI

# Measurement Instruments Per Latent Variable

Latent Variable	Instruments	
Gay identity	Gay Individual Identity – Synthesis Scale Gay Group Membership – Synthesis Scale Gay Identity Questionnaire (Brady and Busse, 1994)	
Self-concept	<ul> <li>Six-Factor Self-Concept Scales (Stake, 1994)</li> <li>Likeability Scale (LS)</li> <li>Task Accomplishment Scale (TAS)</li> <li>Power Scale (PS)</li> <li>Vulnerability Scale (VS)</li> <li>Giftedness Scale (GS)</li> <li>Morality Scale (MS)</li> </ul>	
Psychological Well-Being	<ul> <li>Scales of Psychological Well-Being (Ryff, 1989)</li> <li>Autonomy Scale (AS)</li> <li>Environmental Mastery Scale (EMS)</li> <li>Personal Growth Scale (PGS)</li> <li>Positive Relations With Others Scale (PROS)</li> <li>Purpose in Life Scale (PLS)</li> <li>Self Acceptance Scale (SAS)</li> </ul>	
Ethnic Identity	<ul> <li>Multigroup Ethnic Identity Measure (Phinney, 1992)</li> <li>Identity Achievement Scale (IAS)</li> <li>Ethnic Behaviors Scale (EBS)</li> <li>Sense of belonging Scale (SBS)</li> <li>Other Group Orientation Scale (OGOS)</li> </ul>	

# **Data Analyses**

To answer the first research question, Cronbach's alpha indexes were computed to

examine the internal consistency of all the instruments used in this research.

To answer the first research question, a series of exploratory factor analyses

including the GIISS and the GGMSS were conducted to confirm the validity of gay
identity as a bidimensional construct comprised of gay individual identity formation and gay group membership formation.

To answer the third and fourth research questions, an SEM analysis was conducted to test the full proposed model. Structural equations describe the relationship between dependent latent variables and independent latent variables. The full model includes not only the external model but also the measurement model that contains the indicators used to measure the latent variables and the measurement errors. Figure 5 depicts the full model.

#### Figure 5

KEY:

GIISS - Gay Individual Identity - Synthesis Scale GGMSS - Gay Group Membership - Synthesis Scale GIQ-S1 – Gay Identity Questionnaire, Stage 1: Confusion GIQ-S2 - Gay Identity Questionnaire, Stage 2: Comparison GIO-S3 - Gay Identity Questionnaire, Stage 3: Tolerance GIQ-S4 - Gay Identity Questionnaire, Stage 4: Acceptance GIQ-S5 - Gay Identity Questionnaire, Stage 5: Pride GIO-S6 – Gay Identity Ouestionnaire, Stage 6: Synthesis LS – Likeability Scale TAS - Task Accomplishment Scale PS - Power Scale VS – Vulnerability Scale GS - Giftedness Scale MS – Morality Scale IAS - Identity Achievement Scale EBS – Ethnic Behaviors Scale SBS – Sense of Belonging Scale OGOS - Other-Group Orientation Scale AS – Autonomy Scale PGS – Personal Growth Scale EMS – Environmental Mastery Scale PROS – Positive Relations W/Others Scale

PLS – Purpose in Life Scale

SAS - Self-Acceptance Scale



Figure 5. Full Model: Gay Identity, Self Concept, Ethnic Identity and Psychological Well Being

In this model, the latent variables are identified by circles. The independent latent variables gay identity and self-concept are denoted  $\xi_1$  and  $\xi_2$ , respectively while the dependent latent variables ethnic identity and psychological well-being are denoted  $\eta_1$  and  $\eta_2$ , respectively. The instrumental or measurement variables are identified with rectangles. The factor loadings of the measurement variables in the independent latent variables are denoted  $\lambda_{x1}$  through  $\lambda_{x9}$  while the factor loadings of the measurement variables in the independent latent variables in the dependent latent variables are denoted  $\lambda_{y1}$  through  $\lambda_{y10}$ . The errors of the instrument variables that measure independent latent variables are denoted  $\delta_1$  and  $\delta_9$  while the errors of the instrument variables that measure dependent latent variables are denoted  $\varepsilon_1$  through  $\varepsilon_{10}$ . The correlation between the latent independent variables is denoted  $\phi_1$ . The relationships portrayed by the structural equations including gay identity and ethnic identity and gay identity and psychological well-being are denoted  $\gamma_1$  and  $\gamma_2$ , respectively. Finally the measurement errors of the two structural equations are denoted  $\zeta_1$  and  $\zeta_2$ .

After concluding the model specification step, the next step was model estimation, which consists of estimating the parameters of the relationships portrayed in the full model. These parameters where included in the measurement equations as well as in the structural modeling equations. The equations describing the measurement models are given below.

Measurement equations:

GIISS =  $\lambda_{x11}\xi_1 + \delta 1$ GGMSS =  $\lambda_{x21}\xi_1 + \delta 2$ GIQ-S1 =  $\lambda_{x31}\xi_1 + \delta 3$ 

$GIQ-S2 = \lambda_{x41}\xi_1 + \delta 4$
$GIQ-S3 = \lambda_{x51}\xi_1 + \delta 5$
$GIQ-S4 = \lambda_{x61}\xi_1 + \delta6$
$GIQ-S5 = \lambda_{x71}\xi_1 + \delta7$
$GIQ-S6 = \lambda_{x81}\xi_1 + \delta 8$
$LS = \lambda_{x92}\xi_2 + \delta 9$
$TAS = \lambda_{x102}\xi_2 + \delta 10$
$PS = \lambda_{112}\xi_2 + \delta 11$
$VS = \lambda_{x122}\xi_2 + \delta 12$
$GS = \lambda_{x132}\xi_2 + \delta 13$
$MS = \lambda_{x142}\xi_2 + \delta 14$
$IAS = \lambda_{y11}\eta_1 + \varepsilon 1$
$EBS = \lambda_{y21}\eta_1 + \varepsilon 2$
$SBS = \lambda_{y31}\eta_1 + \varepsilon_3$
$OGOS = \lambda_{y41}\eta_1 + \epsilon 4$
$AS = \lambda_{y51}\eta_1 + \varepsilon 5$
$PGS = \lambda_{y61}\eta_1 + \varepsilon 6$
$EMS = \lambda_{y71}\eta_1 + \epsilon^7$

$$PROS = \lambda_{y81}\eta_1 + \epsilon 8$$
$$PLS = \lambda_{y91}\eta_1 + \epsilon 9$$
$$SAS = \lambda_{y101}\eta_1 + \epsilon 10$$

$$\Phi = \begin{pmatrix} 1 & \phi_{12} \\ \phi_{21} & 1 \end{pmatrix}$$

~

Structural equations:

$$\eta_1 = \xi_1 \gamma_1 + \zeta_1$$
$$\eta_2 = \xi_1 \gamma_2 + \zeta_2$$
$$\Psi = \left( \Psi \right)$$

According to the full model there were 43 parameters to be estimated: 14 factor loadings for two independent latent variables (gay identity and self-concept); 10 factor loadings for two dependent latent variables (ethnic identity and psychological well being); 24 error variances for the instrumental variables (measures); one correlation between two latent variables (gay identity and self-concept); two structural equations (gay identity and ethnic identity and gay identity and psychological well being); and two error variances of the structural equations.

The next step in SEM was model identification, which consists in determining how many degrees of freedom are associated with the proposed model. To determine the degrees of freedom we calculate the total number of observations in the lower diagonal of the

correlation matrix using the following equation:  $\frac{1}{2}(p+q)(p+q+1)$ , where p+qrepresents the total number of instrumental variables (measurements). The result of this equation must be higher than the number of parameters to be estimated (overestimated model). The full model contains 24 measurements, which means that the total number of observations in the lower diagonal of the correlation matrix is 288 and the model has 247 degrees of freedom. It can be concluded that the model is overestimated and rendered valid for further analysis.

#### CHAPTER III

#### Results

#### **Demographic Data**

The participants (n=109) completed a demographic questionnaire that included items about age, sexual orientation, native language, ethnicity, religion, education, occupation, partnership status, dating and participation in therapy.

#### Age.

From the total sample, 106 participants reported their age. The age mean in this sample was 42.53 years old. The ages range from 18 to 77 years old: 17.9% were between 18 and 27 years old, 16.0% were between 28 and 37 years old, 30.2% were between 38 and 47 years old, 22.6% were between 48 and 57 years old, 11.3% were between 58 and 67 years old and 1.9% were between 68 and 77 years old.

#### Sexual orientation.

From the total sample, 106 participants reported their sexual orientation. Most of the participants reported a gay sexual orientation (88.7%). Ten percent of the sample (10.4%) reported a bisexual sexual orientation while .9% reported being omnisexual. For the purpose of this study, the participants that reported being bisexual or omnisexual were removed from the analyses.

#### Language.

Participants were asked about their native language and 105 of them answered this question. Most of the sample (84.8%) reported that English is their native language, while 15.2% reported other native language.

#### Ethnicity.

Participants were asked to identify the ethnicity that best described them by marking one of six alternatives. From the total sample, 107 participants answered this question: 68.2% were White non Latino/Hispanic, 10.3% were Latino/Hispanic, 6.5% were African American, 5.6% were Asian, 2.8% were Pacific Islander and 6.5% answered Other.

#### **Religion.**

Participants were asked about their involvement with a religious community. From the total sample, 106 answered this question: 69% of the sample reported not being involved with a religious community while 31% indicated that they were involved with a religious community.

# **Education.**

Participants were asked about their highest achieved academic degree. From the total sample, 106 participants answered this question: 17% of the sample had a High School Diploma, 5.7% had a Technical College degree, 39.6% had a Bachelor's degree, 17% had Master's degree, 3.8% had a Doctoral degree, 1.9% had Post-doctoral studies and 15.1% reported having another type of degree.

#### Occupation.

Participants were provided a domain in the web survey to write their current occupation. From the total sample, 102 participants answered this question: 80.4% reported having a job while 19.6% were not employed at the moment of the study. The participants who had no employment were either students, on disability or retired. Due to the wide variety of responses of the participants that reported being employed, the

researcher classified the participants' responses using the Standard Occupational Classification (SOC) System used by the US Department of Labor. The SOC System organizes occupations in 23 major occupational groups. Sixteen of these groups were represented in the sample. Table VII shows the distribution in terms of these major occupational groups.

# Table VII

Major Occupational Groups	Distribution (Percentage)
Management	19.6%
Business and Financial Operations	8.8%
Computer and Mathematical	7.8%
Architecture and Engineering	.9%
Life, Physical and Social Science	.9%
Community and Social Service	2.9%
Legal	1.9%
Education, Training and Library	7.8%
Arts, Design, Entertainment, Sports and Media	5.9%
Healthcare Practitioners and Technical	3.9%
Personal Care and Service	.9%
Sales and Related	3.9%
Office and Administrative	5.9%
Installation, Maintenance and Repair	1.9%
Transportation and Material Moving	1.9%
Military Specific	.9%

#### Distribution of Occupations by Major Occupational Group

#### Partnership status.

The participants reported their current partnership status by choosing one of three alternatives: Single, Committed Living Together and Committed Living Separate. From the total sample, 106 participants answered this question: 55.7% were Single, 28.3% were Committed Living Together and 16% were Committed Living Separate.

#### Dating.

Participants were asked about current and past dating experiences with same-sex individuals with two questions: (1) Are you currently dating a same-sex person? and (2) Have you dated a same-sex person before? From the total sample, 105 participants answered the first question: 39% of the sample indicated that they were currently dating a same-sex person while 61% reported not dating a same-sex person. From the total sample, 106 participants answered the question about previous same-sex dating experience: 90.6% indicated that they have dated a same-sex person before while 9.4% reported not dating a same-sex person previously.

#### Disclosure of sexual orientation.

Participants were asked to indicate to whom they have disclosed their sexual orientation by means of marking all that apply from a list including the following categories: Nobody, Close friend(s), Acquaintance(s), Parent(s), Other Family Member(s), Coworker(s), Supervisor(s) and Other. All the participants in the sample answered this question. Close friend(s) is the category with the highest frequency as 84.4% of the participants reported that they have disclosed their sexual orientation to a close friend. Participants disclosed their sexual orientation to people in the following categories: Other Family Members (67%), Acquaintances (64.2%), Parents (59.6%), Coworkers (51.4%), Supervisors (36.7), Other (11%) and Nobody (7.5%).

# Therapy.

Participants were asked about previous experience in therapy with a helping professional. From the total sample, 107 participants answered this question: 52.3%

indicated that they have participated in therapy before while 47.7 indicated that they have never been to therapy prior to the study.

# Research Question #1: Are the Items Reliable and Precise Enough to Grant Further Development of the Items for Research and Clinical Uses?

To test the consistency of the items, Cronbach alphas ( $\alpha$ ) were computed for each of the subscales of each instrument used in this research. The Cronbach alpha is a correlation index that represents the relationship between the items in an instrument and is calculated as follows:

$$\alpha = \frac{k\overline{r}}{[1+(k-1)\overline{r}]}$$

where k is the number of items used in the index, and  $\overline{r}$  the average inter-item correlation among k items. Cronbach's alpha ranges from 0 to 1, where higher indexes indicate higher internal consistency of the instrument. Usually, a Cronbach's alpha of .7 or higher is considered an acceptable level of scale reliability and internal consistency (Lattin, Carroll & Green, 2003). Since Cronbach's alpha is not robust against missing cases, missing data was imputed using the SMEAN command of the statistical software package SPSS 18. In this study, a missing case is an item left in blank by a particular participant. Before imputing the data, this researcher examined the amount of missing cases per instrument in the sample. Percentages of missing data in this sample ranged from .5% (GGMSS) to 5.9% (GIQ). The percentage of missing cases for the total sample in all of the 205 items was 3.1% (see Table VIII in p. 62). By imputing the data, this

researcher was able to increase the size of the sample (n) to 94 and reduce the variance

 $(s^{2}).$ 

Table VIII

Percentage of Missing Cases Per Instrument

Instrument	Percentage Missing Cases
Gay Individual Identity – Synthesis Scale (GIISS)	.7
Gay Group Membership – Synthesis Scale (GGMSS)	.5
Gay Identity Questionnaire (GIQ)	5.9
Scales of Psychological Well Being (SPWB)	2.4
Six-Factor Self-Concept Scales (SFSCS)	2.4
Multigroup Ethnic Identity Measure (MEIM)	5.9
TOTAL (all items)	3.1

# GIISS and GGMSS.

The mean score of the GIISS in this sample was 34.76 and the standard deviation was 5.18. The obtained Cronbach's alpha ( $\alpha$ ) with this sample was .89, which indicates high reliability of the 10 items and, therefore, high internal consistency of the instrument.

The mean score of the GGMSS in this sample was 33.21 and the standard deviation was 3.96. The obtained Cronbach's alpha ( $\alpha$ ) with this sample was .79, which indicates adequate reliability of the 10 items and, therefore, adequate internal consistency of the instrument. Table IX summarizes the reliability results of the GIISS and the GGMSS.

## Table IX

Scale	Mean	Variance	Standard deviation	Cronbach's alpha
GIISS	34.67	28.63	5.24	.89
GGMSS	33.47	15.71	3.54	.74

## Reliability of GIISS and GGMSS

# GIQ.

Brady and Busse (1994) developed this measure based on Cass's developmental model of gay identity. The instrument has six subscales, each one representing one of six developmental stages: Confusion, Comparison, Tolerance, Acceptance, Pride and Synthesis. The mean scores of these subscales in this sample ranged from .34 (Comparison) to 4.21 (Synthesis) and the standard deviations ranged from .69 (Confusion) to 2.40 (Synthesis). The obtained Cronbach's alphas (α) ranged from .42 (Pride) to .85 (Synthesis). Table X summarizes these findings.

Table X

Reliability of GIQ

Subscale	Mean	Variance	Standard deviation	Cronbach's alpha
Stage I: Confusion	.45	.47	.69	.47
Stage II: Comparison	.34	.92	.96	.79
Stage III: Tolerance	1.04	1.74	1.32	.69
Stage IV: Acceptance	2.15	3.69	1.92	.79
Stage V: Pride	2.20	1.89	1.38	.42
Stage VI: Synthesis	4.21	5.77	2.40	.85

These results indicate only the subscales Stage II, Stage IV and Stage VI have highly reliable items and, therefore, have a high internal consistency. The items in Stage III subscale have adequate reliability and, therefore, have adequate internal consistency. Finally, the Confusion and Pride subscales have low reliability and, therefore, low internal consistency. It is important to indicate that the reliability analysis discarded two items included in the Confusion and Acceptance scales because they showed no variance. These results suggested the removal of the scales of Confusion and Pride during the model modification process.

## Six-Factor Self-Concept Measure.

Stake's measure consists of six subscales measuring the following dimensions: Likeability, Task Accomplishment, Power, Vulnerability, Giftedness and Morality. The mean scores of these subscales in this sample ranged from 24.74 (Vulnerability Scale) to 37. 41 (Morality Scale) and the standard deviations ranged from 3.73 (Morality Scale) to 7.53 (Power Scale). The obtained Cronbach's alphas ( $\alpha$ ) ranged from .79 (Morality Scale) to .87 (Giftedness Scale). Table XI summarizes these findings.

Table XI

Scale	Mean	Variance	Standard deviation	Cronbach's alpha
Likeability	35.00	23.69	4.87	.84
Task Accomplishment	34.53	27.16	5.21	.84
Power	32.75	56.77	7.53	.84
Vulnerability	24.74	51.50	7.18	.82
Giftedness	28.20	30.39	5.51	.87
Morality	37.41	13.88	3.73	.79

Reliability of Six-Factor Self-Concept Measure

These results indicate that, for this sample, each scale has highly reliable items and, therefore, each scale has high internal consistency.

# Scales of Psychological Well-Being.

Ryff's (1989) instrument consists of six scales that measure six dimensions:

Autonomy, Environmental Mastery, Personal Growth, Positive Relations With Others,

Purpose in Life and Self-Acceptance. The mean scores of these subscales in this sample

ranged from 26.15 (Personal Growth Scale) to 39.95 (Environmental Mastery Scale) and

the standard deviations ranged from 8.12 (Personal Growth Scale) to 13.69 (Self-

Acceptance Scale). The obtained Cronbach's alphas ( $\alpha$ ) ranged from .82 (Autonomy and

Personal Growth scales) to .92 (Sel-Acceptance Scale). Table XII (in page 65)

summarizes these findings.

Table XII

Scale	Mean	Variance	Standard deviation	Cronbach's alpha
Autonomy	37.13	103.77	10.19	.82
Environmental Mastery	39.95	163.26	12.78	.89
Personal Growth	26.15	65.92	8.12	.82
Positive Relations	35.37	168.76	12.99	.88
Purpose in Life	36.09	117.13	10.82	.84
Self-Acceptance	36.90	187.33	13.69	.92

Reliability of the Scales of Psychological Well-Being

These results indicate that, for this sample, each scale has highly reliable items and,

therefore, each scale has high internal consistency.

#### Multigroup Ethnic Identity Measure.

The Multigroup Ethnic Identity Measure has four subscales that measure the following aspects: Affirmation and Belonging, Ethnic Identity Achievement, Ethnic Behaviors and Other Group Orientation. The mean scores of these subscales in this sample ranged from 4.70 (Ethnic Behaviors with 2 items) to 19.81 (Other Group Orientation with 6 items) and the standard deviations ranged from 1.96 (Ethnic Behaviors) to 5.11 (Ethnic Identity Achievement). The obtained Cronbach's alphas ( $\alpha$ ) ranged from .74 (Ethnic Behaviors) to .88 (Affirmation and Belonging). Table XIII summarizes these findings.

## Table XIII

Scale	Mean	Variance	Standard deviation	Cronbach's alpha
Affirmation and Belonging	15.32	13.83	3.72	.88
Ethnic Identity Achievement	18.57	26.16	5.11	.83
Ethnic Behaviors	4.70	3.86	1.96	.74
Other Group Orientation	19.81	11.93	3.45	.77

# Reliability of Multigroup Ethnic Identity Measure

These results indicate that, for this sample, all the subscales of the MEIM have highly reliable items and, therefore, have high internal consistency.

# Research Question #2: Is gay identity a bidimensional construct that comprises

# individual identity formation and group membership formation?

To answer this question, this researcher ran a series of exploratory factor analyses

using SPSS 18, as part of the SEM analysis. Exploratory factor analysis is a non-

theoretically driven application that seeks to find the latent factors that account for the

patterns of collinearity among multiple metric variables, or items (Lattin, Carroll & Green, 2003). This analysis is commonly used in the development of measurement instruments as it allows examining how a certain set of items, once applied to a sample, group into factors that measure some latent trait. Even if the measure under development may be based on some theory, the first step is always examining how these items will behave without any preconceived ideas. The factor solution consists in orienting the factors in ways that the least amount of factors can account for the greatest possible variance. In exploratory factor analysis is usually desirable to reorient the factors to facilitate their interpretation. This reorientation is achieved by a process called rotation. There are two types of rotation: orthogonal and oblique. The orthogonal rotation assumes that the factors are independent while the oblique assumes that there might be some correlation between them.

To test the validity of the bidimensional model of gay identity, this researcher's first step was to examine the behavior of the 20 items that comprise the piloted scales GIISS and GGMSS. To accomplish this, a series of factor analyses were run with all 20 items: unrotated factors, unrotated forcing 2 factors, rotated orthogonal factors, rotated oblique factors, rotated forcing 2 orthogonal factors and rotated forcing 2 oblique factors. Based on the results of the factor analyses of the 20 items, the same steps were taken to examine the behavior of the 10 items published by McCarn and Miller (1996) and the 10 items developed by this researcher.

Since data were imputed, this researcher also wanted to examine if there were differences between the factor solutions of imputed and not imputed data. Therefore, each one of the exploratory factor analyses was conducted with both imputed and not imputed

data. The results guided decisions regarding the use of imputed or not imputed data to run the confirmatory factor analyses to answer research questions #3 and #4.

The interpretation of the results took into consideration five specific indexes: the Keiser-Mayer-Olkin Measure of Sampling Adequacy, the Bartlett's Test of Sphericity, the determinant of the correlation matrix, the number of iterations and the factor loadings of each item. The KMO evaluates the adequacy of sample size. A KMO index lower than .50 indicates that the sample size is not adequate. Usually, an index equal or higher than .80 indicates that the sample size is more than adequate. The Bartlett's Test of Sphericity is a test of intercorrelation of the variables. The variables should be somewhat correlated but they should not be too highly correlated (extreme multicollinearity). In the case of Bartlett's Tests, it is desirable that the significance is less than .01 (p < .01). The determinant of the correlation matrix examines the multicollinearity of the variables. If the determinant is greater than .00001, then there is no multicollinearity. The number of iterations is the number of attempts to find a satisfactory factor solution.

The factor loadings, expressed as correlation indexes, represent the contribution of each item to every factor extracted by the analysis. In an exploratory factor analysis, each item has one factor loading per factor. The highest of these factor loadings indicates to which factor the item belongs. Furthermore, the higher the factor loading, the bigger is its contribution to that factor. To evaluate the adequacy of the factor loadings, this researcher used Creswell (2005) criteria: .00 to .20 – non existent or too low; .21 to .35 – low; .35 to .65 – moderate; .66 to .85 – high; .86 to 1.00 – very high.

#### **Exploratory Factor Analyses Series with 20 items.**

A comparison of the KMO indexes indicated that the sampling adequacy of the EFA with imputed data (KMO = .841) was better than the sampling adequacy of the EFA without imputed data (KMO = .817). The Bartlett's test was significant in both EFAs. However, the determinants of the matrix are different in both analyses, with the determinant of EFA of the non-imputed data being relatively bigger (4.81 E-005) than the determinant of the EFA of the imputed data (1.29 E-005). These results are the same for each EFA analysis in this series, as they are all based on the same correlation matrix.

#### First step.

The first step in this series was to run exploratory factor analyses (EFA) without rotating factors with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 5 factors after 20 iterations, while the factor solution with imputed data also extracted 5 factors after only 5 iterations. Table XIV shows the factor loading of each item and their factor location.

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	Factor 5	.016	.013	.154	.213	.097	.222	.038	242	.200	134	047	085	378	.216	.204	760.	173	109	.027	302
Ita	Factor 4	106	.024	.165	406	199	122	.379	.354	.157	.109	065	.048	198	.175	960.	.062	053	.008	148	072
Imputed Da	Factor 3	161	368	187	.142	660.	.001	080	.118	.218	083	.325	.511	270	074	.180	227	108	.032	197	.265
EFA	Factor 2	157	395	188	.125	348	303	172	138	.322	.353	090.	050	155	057	.087	.565	.469	.274	.358	160
	Factor 1	.638	.742	.750	.424	.767	.740	.163	.485	.417	.649	.497	544	.557	.744	.594	.553	.693	.550	.318	.769
	Factor 5	.046	.172	.138	311	185	.017	.277	.310	.332	003	173	152	230	.134	.116	.024	143	.008	.008	115
ed Data	Factor 4	134	097	096	223	071	205	.076	.468	103	.181	.035	.109	.196	161	265	063	.181	.221	151	.237
Non-imput	Factor 3	180	402	126	.115	.048	.026	.015	.084	.335	073	.304	.511	401	.034	.271	181	173	.004	220	.174
EFA	Factor 2	163	374	114	.144	291	255	156	132	.351	.395	.035	126	238	.010	.049	.637	.495	.285	.355	241
	Factor 1	.616	.747	.703	.435	800.	.747	.022	.465	.422	.553	.471	.506	.458	.678	.477	.400	.597	.541	.337	.742
	Item	Q#1	Q#2	Q#3	Q#4	Q#5	0#6	Q#7	Q#8	0#9	Q#10	Q#11	Q#12	Q#13	Q#14	Q#15	Q#16	Q#17	Q#18	Q#19	Q#20

In the factor solution of the EFA with non-imputed data, 17 of the 20 items loaded on the first factor while one item (#8) loaded in the fourth factor and the two remaining items (#16 and #19) loaded in the second factor. Based on Creswell (2005) criteria, most of the factor loadings are moderate to high with one exception. Item #7 had a factor loading of .022. This low factor loading suggests that the item contribution to the factor is not significant. Item #8 is also problematic because even though it loaded on the fourth factor, this factor loading (.468) is basically the same as its factor loading in the first factor (.465).

In the factor solution of the EFA with imputed data, 17 of the 20 items loaded on the first factor. One item (#7) loaded on the fourth factor while the two remaining items (#17 and #19) loaded in the second factor. Based on Creswell (2005) criteria, all factor loadings are moderate to high with one exception.

None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

#### Second step.

The second step in this series was to run 2-factor exploratory factor analyses (EFA) without rotating factors with both the imputed and non-imputed data of the GIISS and the GGMSS. In these analyses, the factor solutions were forced to a maximum of two factors. Without imputed data, the 2-factor solution was extracted after 8 iterations, while the 2-factor solution with imputed data was extracted after only 5 iterations. Table XV shows the factor loading of each item and their factor location.

# Table XV

# Factor Loadings for 2-Factor Exploratory Factor Analyses of GIISS and GGMSS 20

	EFA Non-	imputed Data	EFA Imputed Data				
Item	Factor 1	Factor 2	Factor 1	Factor 2			
Q#1	.617	160	.640	161			
Q#2	.720	312	.729	359			
Q#3	.705	118	.747	186			
Q#4	.429	.120	.413	.095			
Q#5	.803	303	.767	359			
Q#6	.750	273	.739	313			
Q#7	.021	150	.160	155			
Q#8	.443	111	.474	121			
Q#9	.408	.279	.413	.292			
Q#10	.557	.403	.652	.355			
Q#11	.466	.014	.492	.045			
Q#12	.485	132	.526	053			
Q#13	.442	185	.540	125			
Q#14	.680	004	.741	065			
Q#15	.468	.023	.591	.072			
Q#16	.405	.654	.552	.545			
Q#17	.594	.484	.695	.467			
Q#18	.541	.281	.554	.278			
Q#19	.337	.354	.318	.353			
Q#20	.734	240	.753	150			

Items, Non-Imputed and Imputed Data

In the factor solution of the EFA with non-imputed data, 18 of the 20 items loaded on the first factor while the two remaining items (#16 and #19) loaded on the second factor. Based on Creswell (2005) criteria, most of the factor loadings are moderate to high with one exception. Item #7 had a factor loading of .021. This low factor loading suggests that the item contribution to the factor is not significant. Item #19 is also problematic because even though it loaded on the second factor, this factor loading (.354) is not too different from its factor loading in the first factor (.337).

In the factor solution of the EFA with imputed data, 19 of the 20 items loaded on the first factor. The remaining item (#19) loaded in the second factor. Based on Creswell (2005) criteria, all factor loadings are moderate to high with one exception. Item #7 ("I still get angry at the way homosexuals are treated, but not as much as once I did.") had a factor loading of .160. This low factor loading suggests that the item contribution to the factor is not significant. Item #19 is also problematic because even though it loaded on the second factor, this factor loading (.353) is not too different from its factor loading in the first factor (.318).

None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

## Third step.

The third step in this series was to run exploratory factor analyses (EFA) with a rotated orthogonal factor solution for both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 5 factors after 8 iterations, while the factor solution with imputed data also extracted 5 factors after only 6 iterations. Table XVI shows the factor loading of each item and their factor location.

Itom		EFA	Non-imput	ed Data			EFA I	imputed Dai	ta	
liein	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q#1	.632	.185	.144	.053	.037	.586	.250	.180	.037	.171
Q#2	.910	.150	.044	057	.205	.819	.183	.068	.255	.263
Q#3	.642	.259	.194	.131	.129	.684	.302	.193	.297	.006
Q#4	.246	.236	.331	.127	357	.332	.255	.269	410	101
Q#5	169.	.119	.522	000 <sup>.</sup>	041	.743	.081	.445	048	860.
Q#6	.706	660.	.356	.178	.015	.762	.134	.323	.008	015
Q#7	.077	098	042	.070	.293	.165	010	.020	.420	052
Q#8	.220	.205	.329	047	.596	.202	.130	.407	.445	.175
6#ð	.055	.368	.235	.562	.160	.084	.413	.345	.071	296
Q#10	.174	.643	.226	.032	.067	.200	.653	.281	.149	.126
Q#11	.168	.174	.520	.117	060	.196	.207	.528	053	.010
Q#12	.161	.022	.718	.151	.050	.193	.095	.720	090.	015
Q#13	.516	.185	.130	448	.026	.436	.245	.133	.018	.567
Q#14	.523	.287	.258	.280	.063	.596	.369	.268	.251	112
Q#15	.300	.131	.293	.439	031	.353	.327	.404	060.	205
Q#16	.081	.737	043	.182	136	.163	808.	.056	.035	077
Q#17	.189	.770	.219	061	061	.193	.768	.283	013	.193
Q#18	.173	.536	.297	.023	.126	.170	.498	.320	.035	860.
Q#19	.213	.471	084	.123	146	.121	.503	023	146	.042
Q#20	.477	.168	.640	-079	.190	.420	.196	.673	.070	.333

Factor Loadings for Exploratory Factor Analyses With Varimax Rotation of GIISS and GGMSS 20 items

<sup>Table</sup> XVI

Once the factors were rotated, the distribution of items across factors was more diverse. In the orthogonal EFA with non-imputed data, nine items loaded on the first factor, 5 items loaded in the second factor, 2 items loaded in the third factor, 2 items loaded on the fourth factor and 2 items loaded on the fifth factor. Based on Creswell (2005) criteria, all factor loadings are moderate to high with one exception. Item #4 had a factor loading of .246. This low factor loading suggests that the item contribution to the factor is not significant.

In the orthogonal EFA with imputed data, 9 items loaded on the first factor, 6 items loaded in the second factor, 2 items loaded in the third factor, 2 items loaded on the fourth factor and 1 item loaded on the fifth factor. Based on Creswell (2005) criteria, all factor loadings are moderate to high with one exception. Item #4 had a factor loading of .336. This low factor loading suggests that the item contribution to the factor is not significant.

In both factor solutions 9 of the 10 items of the GIISS loaded on the first factor. However, the items of the GGMSS and the remaining item of the GIISS loaded on different factors. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

#### Fourth step.

The fourth step in this series was to run exploratory factor analyses (EFA) with a rotated oblique factor solution for both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 5 factors after 21 iterations, while the factor solution with imputed data also extracted 5 factors after only 13 iterations. Table XVII shows the factor loading of each item and their factor location.

14.000		<b>Oblique</b>	EFA Non-ir	nputed Data			Oblique I	EFA Impute	d Data	
IICIII	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q#1	.652	.058	002	.005	.003	.575	.139	.036	016	130
Q#2	996.	.003	154	.129	.162	.855	.052	115	.192	225
Q#3	.636	.141	.032	069	960.	.688	.162	013	.234	.052
Q#4	.211	.123	.271	086	384	.342	.126	.129	456	.132
Q#5	.647	045	.413	.076	096	.756	141	.298	138	040
Q#6	.720	078	.217	112	034	.813	082	.124	076	.066
Q#7	.092	087	057	073	.293	.167	038	019	.407	.073
Q#8	.065	.262	.277	.081	.587	.049	.085	.433	.410	107
6#ð	018	.337	.141	542	.163	008	.346	.231	.044	.360
Q#10	.018	.664	.112	.014	.067	.010	099.	.185	.130	053
Q#11	.058	.112	.498	078	086	.075	.102	.502	101	.055
Q#12	.025	047	.732	112	.015	.044	048	.736	003	860.
Q#13	.468	.146	.048	.504	004	.332	.232	.115	011	537
Q#14	.504	.165	.109	225	.034	.579	.225	.056	.190	.178
Q#15	.300	.008	.204	406	054	.297	.193	.257	.036	.274
Q#16	006	.748	186	151	122	.036	.838	132	.033	.133
Q#17	.016	.793	.092	.115	062	020	.790	.179	029	120
Q#18	.013	.556	.205	.022	.122	.010	.479	.253	.011	035
Q#19	.199	.435	211	093	144	.057	.530	138	145	020
Q#20	.334	960.	.580	.145	.146	.238	.069	.682	000.	248

Factor Loadings for Exploratory Factor Analyses With Oblimin Rotation of GIISS and GGMSS 20 items

Table XVII

In the oblique EFA with non-imputed data, 10 items loaded on the first factor, 6 items loaded in the second factor, 2 items loaded in the third factor, 1 item loaded on the fourth factor and 1 item loaded on the fifth factor. This factor solution loaded 9 items of the GIISS and 1 item of the GGMSS in the first factor. The remaining items loaded across the rest of the factors. Based on Creswell (2005) criteria, most of factor loadings are moderate to high with four exceptions. Item #4 had a factor loading of .246, item #9 had a factor loading of .337, item #15 had a factor loading of .300 and item #20 had a factor loading of .334. These low factor loadings suggest that the items contribution to the factor was not significant.

In the oblique EFA with imputed data, 9 items loaded on the first factor, 5 items loaded in the second factor, 4 items loaded in the third factor, 1 item loaded on the fourth factor and 1 item loaded on the fifth factor. This factor solution loaded 9 of the 10 items from the GIISS in the first factor, while the remaining GIISS item and the items from the GGMSS loaded across all factors. Based on Creswell (2005) criteria, most factor loadings were moderate to high with three exceptions. Item #4 had a factor loading of .342, item #13 had a factor loading of .332 and item #15 had a factor loading of .297. These low factor loadings suggest that the items contribution to the factor is not significant. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

# Fifth step.

The fifth step in this series was to run orthogonal 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. In these analyses, the factor solutions were forced to a maximum of two factors.

In both EFAs, the 2-factor solution was extracted after 3 iterations. Table XVIII shows the factor loading of each item and their factor location.

# Table XVIII

Factor Loadings for 2-Factor Exploratory Analyses With Varimax Rotation of GIISS and

GGMSS 20 items

Itom	EFA Non-	Imputed Data	EFA Imputed Data		
nem	Factor 1	Factor 2	Factor 1	Factor 2	
Q#1	.613	.173	.604	.266	
Q#2	.780	.093	.796	.164	
Q#3	.668	.253	.704	.311	
Q#4	.310	.320	.268	.329	
Q#5	.846	.142	.826	.187	
Q#6	.785	.143	.776	.206	
Q#7	.094	119	.222	024	
Q#8	.439	.128	.449	.196	
Q#9	.211	.446	.147	.484	
Q#10	.278	.629	.297	.680	
Q#11	.395	.247	.361	.338	
Q#12	.485	.130	.448	.281	
Q#13	.475	.063	.503	.232	
Q#14	.590	.339	.625	.403	
Q#15	.393	.255	.422	.420	
Q#16	.021	.769	.101	.769	
Q#17	.269	.718	.262	.795	
Q#18	.326	.515	.266	.560	
Q#19	.113	.476	.035	.474	
Q#20	.755	.163	.687	.344	

In the 2-factor orthogonal solution of the EFA with non-imputed data, 14 of the 20 items load on the first factor while the remaining 6 items loaded in the second factor. Based on Creswell (2005) criteria, most of the factor loadings are moderate to high with two exceptions. Item #4 had a factor loading of .329 and item #7 had a factor loading of

.

.074. These low factor loadings suggest that the items contribution to the factor is not significant.

In the 2-factor orthogonal solution of the EFA with imputed data, 13 of the 20 items loaded on the first factor while the remaining 7 items loaded in the second factor. Based on Creswell (2005) criteria, most factor loadings are moderate to high with two exceptions. Item #4 had a factor loading of .329 and item #7 had a factor loading of .222. These low factor loadings suggest that the item's contribution to the factor is not significant.

None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

# Sixth step.

The final step in this series was to run a 2-factor oblique solution EFA with both non-imputed and imputed data. In these analyses, the factor solutions were forced to a maximum of two factors. In both EFAs, the 2-factor solution was extracted after 7 iterations. Table XIX shows the factor loading of each item and their factor location.

# Table XIX

Factor Loadings for 2-Fac	ctor Exploratory Analyses V	With Oblimin Rotation of GIISS and
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Itom	EFA Non-i	mputed Data	EFA Impu	EFA Imputed Data	
nem	Factor 1	Factor 2	Factor 1	Factor 2	
Q#1	.628	.028	.608	.097	
Q#2	.810	095	.846	075	
Q#3	.678	.097	.708	.115	
Q#4	.295	.253	.218	.274	
Q#5	.876	060	.874	060	
Q#6	.812	045	.813	023	
Q#7	.110	145	.253	098	
Q#8	.449	.024	.452	.071	
Q#9	.179	.407	.045	.483	
Q#10	.232	.577	.165	.649	
Q#11	.392	.157	.319	.254	
Q#12	.497	.015	.430	.164	
Q#13	.493	051	.504	.093	
Q#14	.587	.204	.597	.241	
Q#15	.389	.166	.368	.324	
Q#16	052	.784	075	.809	
Q#17	.214	.671	.097	.786	
Q#18	.293	.450	.160	.527	
Q#19	.073	.461	078	.508	
Q#20	.778	017	.680	.156	

# GGMSS 20 items

In the 2-factor oblique solution of the EFA with non-imputed data, 14 of the 20 items load on the first factor while the remaining 6 items loaded in the second factor. Based on Creswell (2005) criteria, most of the factor loadings are moderate to high with ttwo exceptions. Item #4 had a factor loading of .295 and item #7 had a factor loading of .110. These low factor loadings suggest that the items' contribution to the factor is not significant. In the 2-factor oblique solution of the EFA with imputed data, 13 of the 20 items loaded on the first factor while the remaining 7 items loaded in the second factor. Based on Creswell (2005) criteria, most factor loadings are moderate to high with three exceptions. Item #4 had a factor loading of .274, item #7 had a factor loading of .253 and item #11 had a factor loading of .319. These low factor loadings suggest that the items' contribution to the factor is not significant.

None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

## Exploratory Factor Analyses Series with McCarn & Miller's (1996) 10 Items

A comparison of the KMO indexes indicated that the sampling adequacy of the EFA with non-imputed data (KMO = .803) was better than the sampling adequacy of the EFA with imputed data (KMO = .79). The Bartlett's test was significant in both EFAs. The determinants of the matrix are the same in both analyses (.023). It is important to notice that these determinants improved significantly when compared with the determinants of the correlation matrix of the 20 items (4.81 E-005 for non-imputed data and 1.29 E-005 for imputed data). These results are the same for each EFA analysis in this series, as they are all based on the same correlation matrix.

#### First step.

The first step in this series was to run exploratory factor analyses (EFA) without rotating factors with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 3 factors after 14 iterations,

while the factor solution with imputed data also extracted 3 factors after 27 iterations.

Table XX shows the factor loading of each item and their factor location.

# Table XX

Factor Loadings for Exploratory Factor Analyses of McCarn & Miller's (1995) 10 items

from GIISS and GGMSS

Item –	EFA	A Non-impute	ed Data	EFA Imputed Data		
nem	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Q#1	.710	285	.228	.673	171	.165
Q#2	.763	446	.088	.803	552	.158
Q#4	.463	.117	097	.433	.195	178
Q#5	.860	027	344	.868	004	397
Q#6	.806	138	139	.800	111	131
Q#7	.116	064	.003	.130	169	.083
Q#9	.337	.264	.145	.341	.293	.191
Q#10	.528	.199	.399	.526	.200	.358
Q#11	.526	.406	.024	.505	.423	.047
Q#12	.524	.425	093	.512	.331	.002

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with two exceptions. Item #7 has a factor loading of .116 in the EFA without imputed data and a factor loading of .130 in the EFA with imputed data. Item #9 has a factor loading of .337 in the EFA without imputed data and a factor loading of .340 in the EFA with imputed data. However, the factor loadings of item #9 are very close to the minimum suggested by Creswell (.360). In both analyses all the items loaded on the first factor, even though they were purported to measure two different processes: individual gay identity (items 1, 2, 4, 5 and 6) and gay group membership (items 7, 9, 10, 11 and 12). These results suggest at least two possibilities. Either the items measure one process or gay identity is a unidimensional construct. Based on the adequacy of the sample and the number of iterations, the factor solution with non-imputed data seems to be more robust.

# Second step.

The second step in this series was to run a non-rotated 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the 2-factor solution was extracted after 13 iterations, while the 2-factor solution with imputed data was extracted after 19 iterations. Table XXI shows the factor loading of each item and their factor location.

## Table XXI

Factor Loadings for 2-Factor Exploratory Factor Analyses of McCarn & Miller's (1995)

Item	EFA Non-	imputed Data	EFA Imputed Data		
nem	Factor 1	Factor 2	Factor 1	Factor 2	
Q#1	.702	264	.676	180	
Q#2	.776	464	.797	526	
Q#4	.465	.122	.433	.186	
Q#5	.826	011	.820	004	
Q#6	.808.	127	.807	117	
Q#7	.117	066	.132	167	
Q#9	.337	.249	.342	.273	
Q#10	.503	.147	.509	.159	
Q#11	.533	.419	.514	.440	
Q#12	.529	.430	.521	.346	

10 items from GIISS and GGMSS

Overall, the results of these analyses are not too different from the analyses of the previous step. According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with two exceptions. Item #7 has a factor loading of .117 in the EFA without imputed data and a factor loading of .132 in the EFA with imputed data.

Item #9 has a factor loading of .337 in the EFA without imputed data and a factor loading of .342 in the EFA with imputed data. However, the factor loadings of item #9 are very close to the minimum suggested by Creswell (.360). In both analyses all the items loaded on the first factor, even though they were purported to measure two different processes: individual gay identity (items 1, 2, 4, 5 and 6) and gay group membership (items 7, 9, 10, 11 and 12). These results further suggest the previously metioned two possibilities. Either the items measure one process or gay identity is a unidimensional construct.

Based on the adequacy of the sample and the number of iterations, the factor solution with non-imputed data seems to be more robust.

## Third step.

The third step in this series was to run exploratory factor analyses (EFA) with a rotated orthogonal factor solution for both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 3 factors after 24 iterations, while the factor solution with imputed data also extracted 3 factors after only 5 iterations. Table XXII shows the factor loading of each item and their factor location.
#### Table XXII

Factor Loadings for Exploratory Analyses With Varimax Rotation of McCarn & Miller's

Item	EFA	A Non-imput	ed Data	EFA	A Imputed D	ata
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Q#1	.730	.098	.310	.286	.571	.317
Q#2	.862	.157	.146	.326	.925	.125
Q#4	.237	.372	.208	.437	.041	.254
Q#5	.589	.702	.134	.858	.356	.222
Q#6	.652	.477	.186	.599	.492	.262
Q#7	.127	.032	.017	.000	.229	001
Q#9	.074	.193	.403	.112	.051	.473
Q#10	.284	.085	.623	.093	.286	.595
Q#11	.096	.445	.485	.342	004	.565
Q#12	.067	.536	.415	.369	.052	.483

(1995) 10 items from GIISS and GGMSS

In the EFA with non-imputed data 4 items loaded on the first factor, 3 items loaded on the second factor and 3 items loaded on the third factor. In the EFA with imputed data 3 items loaded on the first factor, 3 items loaded on the second factor and 4 items loaded on the third factor. None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with one exception. Item #7 has a factor loading of .127 in the EFA without imputed data and a factor loading of .229 in the EFA with imputed data. These factor loadings indicate that this item not does contribute significantly to the factor. Based on the adequacy of the sample and the number of iterations, the factor solution of the non-imputed data appears to be stronger.

#### Fourth step.

The fourth step in this series was to run a rotated oblique exploratory factor analyses (EFA) for both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the factor solution extracted 3 factors after 16 iterations, while the factor solution with imputed data extracted 3 factors after only 9 iterations. Table XXIII shows the factor loading of each item and their factor location.

Table XXIII

Factor Loadings for Exploratory Analyses With Oblimin Rotation of McCarn & Miller's (1995) 10 items from GIISS and GGMSS

Item	EFA	Non-impute	d Data	EFA Imputed Data		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Q#1	.778	.425	.111	.484	607	.460
Q#2	.883	.360	025	.534	954	.339
Q#4	.368	.432	187	.493	090	.358
Q#5	.772	.643	492	.939	440	.480
Q#6	.781	.553	275	.739	554	.473
Q#7	.132	.055	014	.046	227	.033
Q#9	.208	.440	.065	.262	080	.488
Q#10	.424	.578	.283	.332	316	.635
Q#11	.314	.664	097	.493	050	.625
Q#12	.298	.662	213	.504	104	.562

In the EFA with non-imputed data 5 items loaded on the first factor and 5 items loaded on the second factor. In the EFA with imputed data 6 items loaded on the first factor and 4 items loaded on the third factor. However, these distributions do not correspond to the initial distribution of items per process. The factor solution of the nonimputed data EFA grouped 4 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS and 1 item of the GIISS in other factor. The factor solution of the imputed data EFA grouped 5 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS in other factor. None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with one exception. Item #7 has a factor loading of .132 in the EFA without imputed data and a factor loading of .046 in the EFA with imputed data. These factor loadings indicate that this item does not contribute significantly to the factor. Based on the adequacy of the sample and the number of iterations, the factor solution of the non-imputed data appears to be slightly better.

#### Fifth step.

The fifth step in this series was to run an orthogonal 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. In these analyses, the factor solutions were forced to a maximum of two factors. In both EFAs, the 2-factor solution was extracted after 3 iterations. Table XXIV shows the factor loading of each item and their factor location.

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#### Table XXIV

Factor Loadings for 2-Factor Exploratory Analyses With Varimax Rotation of McCarn &

Item	EFA Non-imputed Data		EFA Imputed Data		
Item	Factor 1	Factor 2	Factor 1	Factor 2	
Q#1	.708	.247	.355	.603	
Q#2	.893	.141	.198	.934	
Q#4	.279	.391	.439	.172	
Q#5	.641	.521	.581	.578	
Q#6	.702	.420	.492	.650	
Q#7	.132	.025	024	.211	
Q#9	.099	.407	.435	.045	
Q#10	.292	.435	.474	.244	
Q#11	.141	.663	.675	.047	
Q#12	.130	.669	.614	.119	

Miller's (1995) 10 items from GIISS and GGMSS

In the EFA with non-imputed data 5 items loaded on the first factor and 5 items loaded on the second factor. In the EFA with imputed data 6 items loaded on the first factor and 4 items loaded on the third factor. However, these distributions do not correspond to the initial distribution of items per process. The factor solution of the nonimputed data EFA grouped 4 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS and 1 item of the GIISS in other factor. The factor solution of the imputed data EFA grouped 5 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS in other factor.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with one exception. Item #7 has a factor loading of .132 in the EFA without imputed data and a factor loading of .211 in the EFA with imputed data. These factor loadings indicate that this item does not contribute significantly to the factor.

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#### Sixth step.

The sixth step in this series was to run an oblique 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. In the non-imputed data EFA, the 2-factor solution was extracted after 7 iterations. In the imputed data EFA, the 2-factor solution was extracted after 8 iterations. Table XV shows the factor loading of each item and their factor location.

Table XV

Factor Loadings for 2-Factor Exploratory Analyses With Oblimin Rotation of McCarn & Miller's (1995) 10 items from GIISS and GGMSS

Idama	EFA Non-	imputed Data	EFA Impu	ted Data
Item	Factor 1	Factor 2	Factor 1	Factor 2
Q#1	.718	.059	.279	548
Q#2	.958	117	.058	932
Q#4	.192	.353	.438	076
Q#5	.558	.387	.524	468
Q#6	.658	.255	.417	564
Q#7	.141	013	059	227
Q#9	015	.426	.455	.056
Q#10	.193	.398	.464	143
Q#11	048	.701	.710	.111
Q#12	062	.711	.632	.021

In the non-imputed data EFA, five items loaded in each factor. However, these results are consistent with previous steps in that this distribution does not reflect the original distribution of items in the GIISS and the GGMSS. The first factor grouped 4 items from the GIISS and 1 item from the GGMSS while the second factor grouped 4 items of the GGMSS and 1 item from the GIISS. The factor solution in the imputed data EFA grouped all of the items in the first factor.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high with one exception. Item #7 has a factor loading of .141 in the EFA without imputed data and a factor loading of -.059 in the EFA with imputed data. These factor loadings indicate that this item does not contribute significantly to the factor. This finding has been consistent across all the exploratory factor analyses conducted up this point. Based on the adequacy of the sample and the number of iterations, the factor solution of the non-imputed data appears to be slightly better.

#### Exploratory factor analyses series with 10 items developed by researcher

A comparison of the KMO indexes indicated that the sampling adequacy of the EFA with both non-imputed and imputed data is the same (KMO = .760). The Bartlett's test was significant in both EFAs. These factor solutions may not be as robust with a KMO index of less than .80. The determinant of the correlation matrix from the non-imputed data was higher (.039) than the determinant of the correlation matrix from the imputed data (.018). It is important to notice that these determinants improved significantly when compared with the determinants of the correlation matrix of the 20 items ( $4.81 \pm .005$  for non-imputed data and  $1.29 \pm .005$  for imputed data). However, there is a difference between these indexes that is not observed between the determinants of the from the correlation matrix of the 10 items from McCarn & Miller (1996). These results are the same for each EFA analysis in this series, as they are all based on the same correlation matrix.

#### First step.

The first step in this series was to run exploratory factor analyses (EFA) without rotating factors with both the imputed and non-imputed data of the GIISS and the

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GGMSS. Without imputed data, the extraction of factors was terminated after 999 iterations, while the factor solution with imputed data also extracted 2 factors after 8 iterations. Table XVI shows the factor loading of each item and their factor location. Table XVI

Factor Loadings for Exploratory Factor Analysis of Agosto's (2004) 10 items from GIISS and GGMSS

Itom	EFA Imp	outed data
Item	Factor 1	Factor 2
Q #3	.716	274
Q #8	.463	315
Q #13	.539	075
Q #14	.710	191
Q #15	.573	040
Q #16	.625	.436
Q #17	.801	.278
Q #18	.576	.165
Q #19	.382	.421
Q #20	.681	308

The results of the EFA with the imputed data grouped 9 out of the 10 items in one factor. This factor solution did not suggest the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. According to Creswell (2005) criteria, all of the factor loadings are between moderate and high.

# Second step.

The second step in this series was to run a non-rotated 2-factor exploratory factor analysis (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the 2-factor solution was extracted after 11 iterations, while the 2-factor solution with imputed data was extracted after 8 iterations. Table XVII shows the factor loading of each item and their factor location.

Table XXVII

Factor Loadings for 2-Factor Exploratory Factor Analyses of Agosto's (2004) 10 items

from GIISS and GGMSS

Itom	EFA Non-imputed Data		EFA Imputed Data		
nem	Factor 1	Factor 2	Factor 1	Factor 2	
Q #3	.671	276	.716	274	
Q #8	.448	313	.463	315	
Q #13	.433	095	.539	075	
Q #14	.626	197	.710	191	
Q #15	.449	051	.573	040	
Q #16	.522	.507	.625	.436	
Q #17	.719	.310	.801	.278	
Q #18	.603	.132	.576	.165	
Q #19	.440	.399	.382	.421	
Q #20	.629	364	.681	308	

The results of the 2-factor solution with the non-imputed data indicated that all items loaded on the first factor, while the results of the 2-factor solution with the imputed data loaded 9 of the 10 items in the first factor and the remaining item in the second factor. None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be stronger.

According to Creswell (2005) criteria, all of the factor loadings in both EFAs are between moderate and high. However, item #17 poses a problem in the non-imputed data EFA as its loadings in both factors are very similar. None of these factor solutions suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. Based on the adequacy of the sample and the number of iterations, the factor solution of the imputed data appears to be slightly stronger.

#### Third step.

The third step in this series was to run a rotated orthogonal exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the extraction of factors was terminated after 999 iterations, while the factor solution with imputed data extracted 2 factors after 3 iterations. Table XXVIII shows the factor loadings of each item and their factor location. Table XXVIII

Factor Loadings for Exploratory Factor Analysis With Varimax Rotation of Agosto's (2004) 10 items from GIISS and GGMSS

Item	EFA Imputed data		
пеш	Factor 1	Factor 2	
Q #3	.731	.233	
Q #8	.558	.042	
Q #13	.468	.277	
Q #14	.674	.294	
Q #15	.473	.326	
Q #16	.217	.731	
Q #17	.453	.716	
Q #18	.347	.488	
Q #19	.036	.567	
Q #20	.725	.184	

The factor solution grouped 6 items in the first factor and 4 items in the second factor. All of the items of the GIISS loaded in one factor with one item from the GGMSS.

The four items that loaded on the second factor belong to the GGMSS. This factor solution did not suggested the structure of two different instruments (GIISS and GGMSS) that measure two different developmental phases in individual gay identity and gay group membership. According to Creswell (2005) criteria, all factor loadings are between moderate and high.

#### Fourth step.

The fourth step in this series was to run a rotated oblique exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. Without imputed data, the extraction of factors was terminated after 999 iterations, while the factor solution with imputed data extracted 2 factors after 6 iterations. Table XXIX shows the factor loadings of each item and their factor location. Table XXIX

Factor Loadings for Exploratory Factor Analysis With Oblimin Rotation of Agosto's (2004) 10 items from GIISS and GGMSS

Itom	EFA Imputed data				
Item	Factor 1	Factor 2			
Q #3	.757	.020			
Q #8	.612	133			
Q #13	.453	.153			
Q #14	.679	.105			
Q #15	.446	.205			
Q #16	.060	.731			
Q #17	.327	.639			
Q #18	.266	.423			
Q #19	101	.610			
Q #20	.763	032			

The factor solution grouped 6 items in the first factor and 4 items in the second factor. All of the items of the GIISS loaded in one factor with one item from the GGMSS. The four items that loaded on the second factor belong to the GGMSS oblique exploratory factor analyses. According to Creswell (2005) criteria, all factor loadings are between moderate and high.

#### Fifth step.

The fifth step in this series was to run an orthogonal 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. In these analyses, the factor solutions were forced to a maximum of two factors. In both EFAs, the 2-factor solution was extracted after 3 iterations. Table XXX shows the factor loading of each item and their factor location.

#### Table XXX

Factor Loadings for 2-Factor Exploratory Factor Analyses With Varimax Rotation of Agosto's (2004) 10 items from GIISS and GGMSS

Idama	EFA Non-	imputed Data	EFA Impu	ted Data
nem	Factor 1	Factor 2	Factor 1	Factor 2
Q #3	.695	.207	.731	.233
Q #8	.545	.038	.558	.042
Q #13	.397	.198	.468	.277
Q #14	.611	.240	.674	.294
Q #15	.381	.242	.473	.326
Q #16	.088	.722	.217	.731
Q #17	.365	.692	.453	.716
Q #18	.386	.481	.347	.488
Q #19	.091	.587	.036	.567
Q #20	.718	.112	.725	.184

In the EFA with non-imputed data 6 items loaded on the first factor and 4 items loaded on the second factor. In the EFA with imputed data 6 items loaded on the first factor and 4 items loaded on the third factor. However, these distributions do not correspond to the initial distribution of items per process. The factor solution of both EFAs grouped 5 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS in the second factor.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high.

#### Sixth step.

The sixth step in this series was to run an oblique 2-factor exploratory factor analyses (EFA) with both the imputed and non-imputed data of the GIISS and the GGMSS. In both non-imputed and imputed data EFAs, the 2-factor solution was extracted after 6 iterations. Table XXXI shows the factor loading of each item and their factor location.

## Table XXXI

#### Factor Loadings for 2-Factor Exploratory Factor Analyses With Oblimin Rotation of

Itom	EFA Non-	imputed Data	EFA Impu	ted Data
Item	Factor 1	Factor 2	Factor 1	Factor 2
Q #3	.714	.024	.757	.020
Q #8	.589	116	.612	133
Q #13	.389	.101	.453	.153
Q #14	.614	.084	.679	.105
Q #15	.361	.153	.446	.205
Q #16	072	.757	.060	.731
Q #17	.239	.645	.327	.639
Q #18	.312	.410	.266	.423
Q #19	036	.609	101	.610
Q #20	.761	085	.763	032

Agosto's (2004) 10 items from GIISS and GGMSS

In the EFA with non-imputed data 6 items loaded on the first factor and 4 items loaded on the second factor. In the EFA with imputed data 6 items loaded on the first factor and 4 items loaded on the third factor. However, these distributions do not correspond to the initial distribution of items per process. The factor solution of both EFAs grouped 5 items of the GIISS and 1 item of the GGMSS in one factor and 4 items of the GGMSS in the second factor.

According to Creswell (2005) criteria, the factor loading in both EFAs are between moderate and high.

#### Unidimensionality vs. bidimensionality of gay Identity

Before addressing the issue of dimensionality of the construct of gay identity, it is important to decide which data base should be considered before reaching any conclusions. Based on the factor loadings, it was concluded that all but one of the items are good when it comes to measuring the construct. Item #7 ("I still get angry at the way homosexuals are treated, but not as much as I once did.") was the only item that obtained very low factor loadings across the 18 exploratory analyses conducted in this study. This item was removed from the data during the model modification phase.

When comparing the factor solutions of non-imputed data with the imputed data, overall, the results of the imputed data were more stable with higher adequacy of sampling and less iterations per exploratory factor analysis. As noted before, some of the exploratory analyses conducted with the non-imputed data could not extract a factor solution after 999 iterations.

When comparing the factor solutions of the items published by McCarn and Miller (1996) with the items developed with this researcher, the items by McCarn and Miller appear to be better measures of the gay identity construct. It is important to notice that the determinant of the correlation matrix improved when the items developed by this researcher were removed from the analyses. Furthermore, the exploratory factor analyses that could not obtain a factor solution were all conducted with data from the items developed by this researcher.

Therefore, the research question about the dimensionality of the gay identity construct was answered based on the series of imputed-data exploratory factor analyses based on the data from the items of McCarn and Miller (1996). From this series, none of the factor solutions explained satisfactorily the structure proposed by the measures GIISS and GGMSS. Actually, none of the 18 exploratory analyses in all three series explained satisfactorily this structure. The best factor solution suggested was the orthogonal three factor model that explained 63.3% of variance in the latent variable. When this model

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was forced to two factors, the explained variance was reduced to 52.7%. Moreover, the factor loadings did not support the structure of the GIISS and the GGMSS. Both factors loaded items from both measures.

Even when some of the factor solutions grouped most of the items in one factor, they failed to explain more than 50% percent of the variance of the latent trait. Although we cannot make definite conclusions about the dimensionality of the construct, the sample data suggested a multidimensional construct as the best solution includes three independent factors.

# Research Question #3: Do the responses to the items correlate with other constructs in a manner that is consistent with the external model?

This research question was answered by executing an SEM analysis consisting of a series of confirmatory factor analyses to test and modify the proposed full model. In general, SEM analysis is a strategy to test how much of the proposed model actually fits the sample data. In this study, the proposed model was tested by means of a confirmatory analysis. The successive analyses represent an attempt to modify the model in a way that best fits the sample data (model modification). A total of 9 confirmatory analyses were run. To evaluate model's fit to sample data, three indexes were examined: the goodnessof-fit index (GFI), the adjusted goodness-of-fit for degrees of freedom (AGFI) and the root mean square residual (RMR). An adequate fit is characterized by an RMR lower than .10, and a GFI/AGFI higher than .95. The model modifications introduced in each successive confirmatory analysis were determined by the p value. Those scales with p values significantly different from .000 were removed in each successive step.

#### First Step.

Regardless of the reliability results, the first step in SEM is testing the full proposed model. Therefore, this step consisted in conducting a confirmatory analysis to test the full proposed model (see Figure 5, pp. 54-55). This model included two latent independent variables (gay identity and self-concept) and two latent dependent variables (ethnic identity and psychological well being). Gay identity had 8 observable variables with their respective measurement errors: GIISS, GGMSS and the 6 subscales of the GIQ (Stage 1: Confusion, Stage 2: Comparison, Stage 3: Tolerance, Stage 4: Acceptance, Stage 5: Pride, and Stage 6: Synthesis). Self-Concept had Stake's Self-Concept Scales as its 6 observable variables with their respective measurement errors: Likeability Scale, Task Accomplishment Scale, Power Scale, Vulnerability Scale, Giftedness Scale and Morality Scale. Ethnic identity had the MEIM subscales as its 4 observable variables with their respective measurement errors: Identity Achievement Scale, Ethnic Behaviors Scale, Affirmation and Sense of Belonging Scale and Other Group Orientation Scale. Psychological well being had Ryff's Scales of Psychological Well Being as its 6 observable variables with their respective measurement errors: Autonomy Scale, Personal Growth Scale, Environmental Mastery Scale, Positive Relations With Others Scale, Purpose in Life Scale and Self-Acceptance Scale.

With a RMR of .918, a GFI of .672 and an AGFI of .597, it was concluded that the full proposed model did not fit the sample.

#### Second Step.

The second step includes the first modification to the original full proposed model. This modification was based on both the reliability results and the exploratory factor analyses conducted previously. The reliability results indicated that the scales Stage 1: Confusion and Stage 5: Pride, were not reliable enough as they lacked internal consistency. Therefore, these scales were removed as part of the first modification. On the other hand, the exploratory factor analyses suggested that 9 out of Miller and Fassinger's (1995) 10 items included in the GIISS and the GGMSS were the best items, even though they were measuring one dimension, rather than the proposed two. Therefore, this researcher grouped these items into one scale (Gay Identity Inventory – GII) and included it in the model to substitute the GIISS and the GGMSS as they were formulated (see Figure 6).

# Figure 6

KEY:

GII - Gay Identity Inventory GIQ-S2 - Gay Identity Questionnaire, Stage 2: Comparison GIQ-S3 - Gay Identity Questionnaire, Stage 3: Tolerance GIQ-S4 – Gay Identity Questionnaire, Stage 4: Acceptance GIQ-S6 – Gay Identity Questionnaire, Stage 6: Synthesis LS – Likeability Scale TAS – Task Accomplishment Scale PS – Power Scale VS – Vulnerability Scale GS – Giftedness Scale MS – Morality Scale IAS – Identity Achievement Scale EBS – Ethnic Behaviors Scale SBS – Sense of Belonging Scale OGOS - Other-Group Orientation Scale AS – Autonomy Scale PGS – Personal Growth Scale EMS – Environmental Mastery Scale PROS – Positive Relations W/Others Scale PLS – Purpose in Life Scale SAS - Self-Acceptance Scale





Figure 6. Full Model: Modified Model I







Figure 6. Full Model: Modified Model I

# With an RMR of .136, a GIF of .739 and an AGFI of .676, it was concluded that

this model did not fit the sample. Table XXXII shows the parameter estimates with their

corresponding P values.

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454.	910	.012	φ Gay Identity / Self Concept
Ь	Standard Estimate	Estimate	Parameter

#### Table XXXII (cont.)

Parameter	Estimate	Standard Estimate	Р
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ←Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.107	.316	***
εSAS	.116	.032	***
γ Ethnic Identity ←Gay Identity	.201	.210	.340
ζ Ethnic Identity	.315	.078	***
$\lambda$ SBS $\leftarrow$ Ethnic Identity	1.000		
εSBS	.229	.045	***
$\lambda$ IAS $\leftarrow$ Ethnic Identity	1.252	.163	***
εIAS	.028	.048	.552
$\lambda EBS \leftarrow Ethnic Identity$	1.192	.172	***
εEBS	.502	.085	***
$\lambda \text{ OGOS} \leftarrow \text{Ethnic Identity}$	.186	.107	.084
εOGOS	.317	.047	***

Parameter estimates of modified model I

The next successive modifications were based on the P value. According to the results, the P values of 8 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .434$ ), the measurement error of the Task Accomplishment Scale ( $\delta$  TAS = .004), the regression weight of the Vulnerability Scale and the variable Self-Concept ( $\lambda$  VS $\leftarrow$ SC = .007), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma$  PWB $\leftarrow$ GI = .002), the measurement error of the variable Psychological Well Being ( $\zeta$  PWB = .002), the regression weight of the structural equation of Ethnic Identity and Gay Identity ( $\gamma$  EI $\leftarrow$ GI = .340), the measurement error of the Identity Achievement Scale ( $\delta$  IAS = .552) and the regression weight of the Other Group Orientation Scale) and Ethnic Identity ( $\lambda$  OGOS $\leftarrow$ EI = .084). This researcher decided not to eliminate any latent variable at this

point as it was a too radical solution at this point. Eliminating either Self-Concept or Ethnic Identity, would have removed between 4 and 6 scales at once. From the remaining estimates, this researcher decided to keep in the model those scales with p values very close to .000. Two P values were significantly high:  $\delta$  IAS = .552 and  $\lambda$  OGOS  $\leftarrow$  EI = .084. One of these values is associated with the measurement error of the Identity Achievement Scale (IAS) from the Multigroup Ethnic Identity Measure (MEIM) and the other is the regression of the Other Group Orientation Scale (OGOS) of the MEIM. Even though the measurement error has a higher P value, this researcher decided to keep the IAS scale in the model and removed the OGOS to examine how this would affect the measurement errors related to the MEIM.

#### Third Step.

The next modification consisted in removing the Other Orientation Group Scale of the MEIM from the model. Figure 7 presents the modified model.

# Figure 7

KEY:

GII - Gay Identity Inventory GIQ-S2 - Gay Identity Questionnaire, Stage 2: Comparison GIQ-S3 - Gay Identity Questionnaire, Stage 3: Tolerance GIQ-S4 – Gay Identity Questionnaire, Stage 4: Acceptance GIQ-S6 - Gay Identity Questionnaire, Stage 6: Synthesis LS - Likeability Scale TAS – Task Accomplishment Scale PS – Power Scale VS – Vulnerability Scale GS - Giftedness Scale MS - Morality Scale IAS - Identity Achievement Scale EBS – Ethnic Behaviors Scale SBS – Sense of Belonging Scale AS - Autonomy Scale PGS - Personal Growth Scale EMS - Environmental Mastery Scale PROS – Positive Relations W/Others Scale PLS – Purpose in Life Scale SAS - Self-Acceptance Scale



Figure 7. Full Model: Modified Model II

**N**ine

With an RMR of .139, a GIF of .752 and an AGFI of .688, it was concluded that

this model did not fit the sample. Table XXXIII shows the parameter estimates with their

corresponding P values.

## Table XXXIII

# Parameter estimates of modified model II

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.012	.016	.434
$\lambda GII \leftarrow Gay Identity$	1.000		
δGII	.132	.021	***
λ GIQ-S2 ←Gay Identity	-1.582	.365	***
δ GIQ-S2	.680	.104	***
λ GIQ-S3 ←Gay Identity	-3.643	.554	***
δ GIQ-S3	.478	.108	***
λ GIQ-S4 ←Gay Identity	-5.237	.803	***
δ GIQ-S4	1.085	.234	***
λ GIQ-S6 ←Gay Identity	6.161	.985	***
δ GIQ-S6	2.167	.407	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.000		
δLS	.485	.079	***
$\lambda TAS \leftarrow Self-Concept$	1.755	.418	***
δΤΑΣ	.237	.082	.004
$\lambda PS \leftarrow Self-Concept$	1.139	.328	***
δPS	.627	.102	***
$\lambda$ VS $\leftarrow$ Self-Concept	-1.026	.383	.007
δVS	1.241	.189	***
$\lambda GS \leftarrow Self-Concept$	1.512	.437	***
δGS	1.131	.183	***
λ MS ←Self-Concept	.907	.236	***
δΜS	.245	.043	***
γ Psychological Well Being ← Gay Identity	565	.185	.002
ζ Psychological Well Being	.157	.051	.002
$\lambda AS \leftarrow Psychological Well Being$	1.000		
εAS	.337	.051	***
λ EMS ← Psychological Well Being	1.835	.286	***
εEMS	.194	.036	***
λ PGS ← Psychological Well Being	.861	.165	***
εPGS	.194	.030	***

#### Table XXXIII (cont.)

Parameter	Estimate	Standard Estimate	Р
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ←Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.107	.316	***
εSAS	.116	.032	***
$\gamma$ Ethnic Identity $\leftarrow$ Gay Identity	.209	.219	.340
ζ Ethnic Identity	.330	.079	***
$\lambda$ SBS $\leftarrow$ Ethnic Identity	1.000		
εSBS	.213	.044	***
$\lambda$ IAS $\leftarrow$ Ethnic Identity	1.191	.151	***
εIAS	.053	.045	.227
$\lambda EBS \leftarrow Ethnic Identity$	1.193	.167	***
εEBS	.480	.083	***

Parameter estimates of modified model II

According to the results, the P values of 7 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .434$ ), the measurement error of the Task Accomplishment Scale ( $\delta$  TAS = .004), the regression weight of the Vulnerability Scale and the variable Self-Concept ( $\lambda$  VS  $\leftarrow$  SC = .007), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma$  PWB  $\leftarrow$  GI = .002), the measurement error of the variable Psychological Well Being ( $\zeta$  PWB = .002), the regression weight of the structural equation of Ethnic Identity and Gay Identity ( $\gamma$  EI  $\leftarrow$  GI = .340) and the measurement error of the Identity Achievement Scale ( $\delta$  IAS = .227). These are the same results of the previous step with two exceptions: the OGOS is not included in this model and the measurement error of the IAS dropped to .227. Even though this P value is still significantly higher than .000, this researcher decided to keep this scale in model for two reasons. First, from a theoretical perspective,

it is important to have in the model a scale that is analogous to the gay identity scales. Second, since the P value of the measurement error dropped, it is important to examine if removing other scales could lower this scale's measurement error. As a result the next higher P values were .007 obtained by the Vulnerability Scale and .004 obtained by the measurement error of the Task Accomplishment Scale. Both scales were removed from the model..

# **Fourth Step**

The next modification consisted in removing from the model the Vulnerability and Task Accomplishment scales of the Ryff's Scales of Self-Concept. Figure 8 presents the modified model.

## Figure 8

KEY:

GII - Gay Identity Inventory GIQ-S2 - Gay Identity Questionnaire, Stage 2: Comparison GIQ-S3 - Gay Identity Questionnaire, Stage 3: Tolerance GIQ-S4 - Gay Identity Questionnaire, Stage 4: Acceptance GIQ-S6 - Gay Identity Questionnaire, Stage 6: Synthesis LS - Likeability Scale PS – Power Scale GS - Giftedness Scale MS - Morality Scale IAS – Identity Achievement Scale EBS - Ethnic Behaviors Scale SBS – Sense of Belonging Scale AS – Autonomy Scale PGS - Personal Growth Scale EMS – Environmental Mastery Scale PROS - Positive Relations W/Others Scale PLS – Purpose in Life Scale SAS - Self-Acceptance Scale



Figure 8. Full Model: Modified Model III

and a second

With an RMR of .117, a GIF of .775 and an AGFI of .709, it was concluded that

this model did not fit the sample. Table XXXIV shows the parameter estimates with their

corresponding P values.

# Table XXXIV

# Parameter estimates of modified model III

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.027	.019	.115
λ GII ← Gay Identity	1.000		
δGII	.132	.021	***
λ GIQ-S2 ← Gay Identity	-1.577	.364	***
δ GIQ-S2	.680	.104	***
λ GIQ-S3 ←Gay Identity	-3.611	.549	***
δ GIQ-S3	.492	.109	***
λ GIQ-S4 ←Gay Identity	-5.226	.798	***
δ GIQ-S4	1.081	.234	***
λ GIQ-S6 ←Gay Identity	6.169	.981	***
δ GIQ-S6	2.138	.404	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.000		
δLS	.468	.086	***
$\lambda PS \leftarrow Self-Concept$	1.247	.371	***
δPS	.557	.112	***
$\lambda GS \leftarrow Self-Concept$	2.027	.601	***
δGS	.759	.223	***
λ MS ←Self-Concept	.568	.213	***
δΜS	.322	.052	***
γ Psychological Well Being ←Gay Identity	569	.184	.002
ζ Psychological Well Being	.157	.051	.002
$\lambda AS \leftarrow Psychological Well Being$	1.00		
εAS	.336	.051	***
λ EMS ←Psychological Well Being	1.834	.286	***
εEMS	.194	.036	***
λ PGS ←Psychological Well Being	.861	.165	***
εPGS	.194	.030	***
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ← Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.107	.316	***
εSAS	.116	.032	***

#### Table XXXIV (cont.)

Parameter	Estimate	Standard Estimate	Р
γ Ethnic Identity ← Gay Identity	.211	.218	.333
ζ Ethnic Identity	.330	.079	***
$\lambda$ SBS $\leftarrow$ Ethnic Identity	1.000		
εSBS	.213	.044	***
$\lambda$ IAS $\leftarrow$ Ethnic Identity	1.191	.151	***
εIAS	.053	.045	.236
$\lambda EBS \leftarrow Ethnic Identity$	1.193	.167	***
εEBS	.479	.083	***

Parameter estimates of modified model III

According to the results, the P values of 5 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .434$ ), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma$  PWB $\leftarrow$ GI = .002), the measurement error of the variable Psychological Well Being ( $\zeta$  PWB = .002), the regression weight of the structural equation of Ethnic Identity and Gay Identity ( $\gamma$  EI $\leftarrow$ GI = .340) and the measurement error of the Identity Achievement Scale ( $\delta$  IAS = .227). These values exhibit some notable changes. The P values of correlation between Gay Identity and Self-Concept and the regression weight of the structural equation of the structural equation of Ethnic Identity and Self-Concept and the regression weight of the structural equation of Ethnic Identity and Gay Identity are smaller when compared with the P values obtained in the previous step. The same is true for the measurement error of the Identity Achievement Scale. Since the P value related with the IAS is still higher than .000, this researcher decided to remove the scale from the model to examine its influence in the regression weight of Ethnic Identity and Gay Identity.

# Fifth Step.

The next modification consisted in removing from the model the Identity Achievement Scale of the Multigroup Ethnic Identity Measure. Figure 9 presents the modified model.

# Figure 9

KEY:

- GII Gay Identity Inventory
- GIQ-S2 Gay Identity Questionnaire, Stage 2: Comparison
- GIQ-S3 Gay Identity Questionnaire, Stage 3: Tolerance
- GIQ-S4 Gay Identity Questionnaire, Stage 4: Acceptance
- GIQ-S6 Gay Identity Questionnaire, Stage 6: Synthesis
- LS Likeability Scale
- PS Power Scale
- GS Giftedness Scale
- MS Morality Scale
- EBS Ethnic Behaviors Scale
- SBS Sense of Belonging Scale
- AS Autonomy Scale
- PGS Personal Growth Scale
- EMS Environmental Mastery Scale
- PROS Positive Relations W/Others Scale
- PLS Purpose in Life Scale
- SAS Self-Acceptance Scale



Figure 9. Full Model: Modified Model IV

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With an RMR of .119, a GIF of .770 and an AGFI of .7697, it was concluded that

this model did not fit the sample. Table XXXV shows the parameter estimates with their

corresponding P values.

## Table XXXV

## Parameter estimates of modified model IV

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.027	.019	.153
$\lambda GII \leftarrow Gay Identity$	1.000		
δGII	.132	.021	***
λ GIQ-S2 ←Gay Identity	-1.576	.363	***
δ GIQ-S2	.681	.104	***
λ GIQ-S3 ←Gay Identity	-3.608	.549	***
δ GIQ-S3	.494	.109	***
λ GIQ-S4 ←Gay Identity	-5.226	.798	***
δ GIQ-S4	1.080	.234	***
λ GIQ-S6 ←Gay Identity	6.171	.981	***
δ GIQ-S6	2.135	.404	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.000		
δLS	.467	.086	***
$\lambda PS \leftarrow Self-Concept$	1.247	.371	***
δPS	.557	.112	***
$\lambda GS \leftarrow Self-Concept$	2.026	.601	***
δGS	.759	.223	***
λ MS ← Self-Concept	.568	.213	.008
δΜS	.322	.052	***
$\gamma$ Psychological Well Being $\leftarrow$ Gay Identity	570	.184	.002
ζ Psychological Well Being	.157	.051	.002
$\lambda AS \leftarrow Psychological Well Being$	1.000		
εΑS	.336	.051	***
λ EMS ←Psychological Well Being	1.834	.286	***
εEMS	.194	.036	***
λ PGS ←Psychological Well Being	.861	.165	***
εPGS	.194	.030	***
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ←Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ← Psychological Well Being	2.106	.316	***
εSAS	.116	.032	***

#### Table XXXV (cont.)

Parameter	Estimate	Standard Estimate	Р
$\gamma$ Ethnic Identity $\leftarrow$ Gay Identity	.288	.267	.280
ζ Ethnic Identity	.629	1.042	.546
$\lambda$ SBS $\leftarrow$ Ethnic Identity	1.000		
εSBS	090	1.038	.931
$\lambda EBS \leftarrow Ethnic Identity$	.624	1.022	.542
εEBS	.707	.417	.090

Parameter estimates of modified model IV

According to the results, the P values of 7 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .153$ ), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma$  PWB $\leftarrow$ GI = .002), the regression weight of the Morality Scale and Self Concept ( $\lambda$  MS $\leftarrow$ SC = .008), the measurement error of the variable Psychological Well Being ( $\zeta$  PWB = .002), the regression weight of the structural equation of Ethnic Identity and Gay Identity ( $\gamma$  EI $\leftarrow$ GI = .542), the measurement error of the Sense of Belonging Subscale ( $\delta$  SBS = .931) and the measurement error of the Ethnic Behavior Scale ( $\delta$  EBS = .090). The most salient aspect of these results is the significant increase of the P values associated with scales from the Ethnic Identity variable. Due to this situation, this researcher decided to remove the latent variable Ethnic Identity from the model.

#### Sixth Step

The next modification consisted in removing from the model the latent variable. Ethnic Identity. Figure 10 presents the modified model.

## Figure 10

KEY:

GII – Gay Identity Inventory

GIQ-S2 - Gay Identity Questionnaire, Stage 2: Comparison

GIQ-S3 – Gay Identity Questionnaire, Stage 3: Tolerance

GIQ-S4 - Gay Identity Questionnaire, Stage 4: Acceptance

GIQ-S6 - Gay Identity Questionnaire, Stage 6: Synthesis

LS – Likeability Scale

PS - Power Scale

GS – Giftedness Scale

MS – Morality Scale

AS – Autonomy Scale

PGS – Personal Growth Scale

EMS - Environmental Mastery Scale

PROS - Positive Relations W/Others Scale

PLS – Purpose in Life Scale

SAS - Self-Acceptance Scale



Figure 10. Full Model: Modified Model V

With an RMR of .119, a GIF of .803 and an AGFI of .731, it was concluded that

this model did not fit the sample. Table XXXVI shows the parameter estimates with their

corresponding P values.

Table XXXVI

Parameter estimates of modified model V

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.027	.019	.158
$\lambda GII \leftarrow Gay Identity$	1.00		
δGII	.133	.021	***
λ GIQ-S2 ←Gay Identity	-1.577	.367	***
δ GIQ-S2	.684	.105	***
λ GIQ-S3 ←Gay Identity	-3.628	.558	***
δ GIQ-S3	.499	.109	***
λ GIQ-S4 ← Gay Identity	-5.290	.813	***
δ GIQ-S4	1.056	.232	***
λ GIQ-S6 ←Gay Identity	6.244	.997	***
δ GIQ-S6	2.104	.400	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.00		
δLS	.468	.086	***
$\lambda PS \leftarrow Self-Concept$	1.248	.372	***
δPS	.558	.112	***
λ GS ← Self-Concept	2.031	.603	***
δGS	.757	.223	***
$\lambda$ MS $\leftarrow$ Self-Concept	.569	.213	.008
δΜS	.322	.052	***
γ Psychological Well Being ←Gay Identity	565	.185	.002
ζ Psychological Well Being	.158	.051	.002
$\lambda AS \leftarrow Psychological Well Being$	1.000		
εAS	.336	.051	***
λ EMS ←Psychological Well Being	1.834	.286	***
εΕΜS	.194	.036	***
λ PGS ← Psychological Well Being	.861	.165	***
εPGS	.194	.030	***
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ← Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.106	.316	***
εSAS	.116	.032	***

According to the results, the P values of 4 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .158$ ), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma PWB \leftarrow GI = .002$ ), the regression weight of the Morality Scale and Self Concept ( $\lambda MS \leftarrow SC = .008$ ) and the measurement error of the variable Psychological Well Being ( $\zeta PWB = .002$ ). Based on these P values, this researcher decided to remove the Morality Scale from the model to examine its effect on the correlation between Gay Identity and Self-Concept.

## Seventh Step.

The next modification consisted in removing from the model the Morality Scale from the Stake's Six Factor Self-Concept Scales. Figure 11 presents the modified model.

## Figure 11

KEY:

- GII Gay Identity Inventory
- GIQ-S2 Gay Identity Questionnaire, Stage 2: Comparison
- GIQ-S3 Gay Identity Questionnaire, Stage 3: Tolerance
- GIQ-S4 Gay Identity Questionnaire, Stage 4: Acceptance
- GIQ-S6 Gay Identity Questionnaire, Stage 6: Synthesis
- LS Likeability Scale
- PS Power Scale
- GS Giftedness Scale
- AS Autonomy Scale
- PGS Personal Growth Scale
- EMS Environmental Mastery Scale
- PROS Positive Relations W/Others Scale
- PLS Purpose in Life Scale
- SAS Self-Acceptance Scale



Figure 11. Full Model: Modified Model VI

With an RMR of .122, a GIF of .806 and an AGFI of .729, it was concluded that

this model did not fit the sample. Table XXXVII shows the parameter estimates with

their corresponding P values.

## Table XXXVII

Parameter estimates of modified model VI

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.026	.018	.150
λ GII ← Gay Identity	1.000		
δGII	.133	.021	***
λ GIQ-S2 ←Gay Identity	-1.578	.367	***
δ GIQ-S2	.683	.105	***
λ GIQ-S3 ← Gay Identity	-3.627	.557	***
δ GIQ-S3	.499	.109	***
λ GIQ-S4 ←Gay Identity	-5.287	.812	***
δ GIQ-S4	1.058	.232	***
λ GIQ-S6 ←Gay Identity	6.244	.997	***
δ GIQ-S6	2.102	.400	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.000		
δLS	.497	.089	***
$\lambda PS \leftarrow Self-Concept$	1.333	.420	.002
δPS	.570	.121	***
λ GS ← Self-Concept	2.370	.829	.004
δGS	.650	.290	***
γ Psychological Well Being ←Gay Identity	564	.185	.002
ζ Psychological Well Being	.158	.051	.002
λ AS ←Psychological Well Being	1.000		
εAS	.336	.051	***
λ EMS ←Psychological Well Being	1.834	.286	***
εEMS	.194	.036	***
λ PGS ← Psychological Well Being	.861	.165	***
εPGS	.194	.030	***
λPROS ←Psychological Well Being	1.664	.279	***
εPROS	.334	.054	***
λ PLS ←Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.106	.316	***
εSAS	.116	.032	***

According to the results, the P values of 5 estimates were higher than .000: the correlation between Gay Identity and Self-Concept ( $\phi = .150$ ), the regression weight of the structural equation of Psychological Well Being and Gay Identity ( $\gamma$  PWB $\leftarrow$ GI = .002), the regression weight of Power and Self Concept ( $\lambda$  PS $\leftarrow$ SC = .002), the regression weight of Giftedness and Self Concept ( $\lambda$  GS $\leftarrow$ SC = .004) and the measurement error of the variable Psychological Well Being ( $\zeta$  PWB = .002). With the removal of the Morality Scale, the P value of correlation between Gay Identity and Self-Concept dropped to .150 from .158. Based on these results, this researcher decided to remove the Giftedness Scale.

## **Eighth Step**

The next modification consisted in removing from the model the Giftedness Scale from the Stake'sSix Factor Self-Concept Scales. Figure 12 presents the modified model.

## Figure 12

KEY:

GII – Gay Identity Inventory GIQ-S2 – Gay Identity Questionnaire, Stage 2: Comparison GIQ-S3 – Gay Identity Questionnaire, Stage 3: Tolerance GIQ-S4 – Gay Identity Questionnaire, Stage 4: Acceptance GIQ-S6 – Gay Identity Questionnaire, Stage 6: Synthesis LS – Likeability Scale PS – Power Scale AS – Autonomy Scale PGS – Personal Growth Scale EMS – Environmental Mastery Scale PROS – Positive Relations W/Others Scale PLS – Purpose in Life Scale SAS - Self-Acceptance Scale



Figure 12. Full Model: Modified Model VII

With an RMR of .119, a GIF of .813 and an AGFI of .730, it was concluded that

this model did not fit the sample. Table XXXVIII shows the parameter estimates with

their corresponding P values.

### Table XXXVIII

## Parameter estimates of modified model VII

Parameter	Estimate	Standard Estimate	Р
φ Gay Identity / Self Concept	.038	.028	.173
$\lambda GII \leftarrow Gay Identity$	1.000		
δGII	.132	.021	***
λ GIQ-S2 ←Gay Identity	-1.583	.366	***
δ GIQ-S2	.680	.104	***
$\lambda GIQ-S3 \leftarrow Gay Identity$	-3.636	.555	***
δ GIQ-S3	.484	.108	***
λ GIQ-S4 ←Gay Identity	-5.244	.805	***
δ GIQ-S4	1.083	.234	***
λ GIQ-S6 ←Gay Identity	6.188	.988	***
δ GIQ-S6	2.143	.404	***
$\lambda$ LS $\leftarrow$ Self-Concept	1.000		
δLS	.434	.225	.054
$\lambda PS \leftarrow Self-Concept$	.905	.896	.313
δPS	.665	.202	***
γ Psychological Well Being ←Gay Identity	567	.185	.002
ζ Psychological Well Being	.157	.051	.002
$\lambda AS \leftarrow Psychological Well Being$	1.000		
εAS	.336	.051	***
λ EMS ←Psychological Well Being	1.835	.286	***
εEMS	.194	.036	***
λ PGS ←Psychological Well Being	.861	.165	***
εPGS	.194	.030	***
λPROS ←Psychological Well Being	1.665	.279	***
εPROS	.334	.054	***
λ PLS ← Psychological Well Being	1.525	.240	***
εPLS	.156	.028	***
λ SAS ←Psychological Well Being	2.107	.316	***
εSAS	.116	.032	***

According to the results, the P values of 5 estimates were higher than .000: the

correlation between Gay Identity and Self-Concept ( $\phi = .173$ ), the regression weight of

the structural equation of Psychological Well Being and Gay Identity ( $\gamma PWB \leftarrow GI =$  .002), the regression weight of Power and Self Concept ( $\lambda PS \leftarrow SC = .313$ ), the regression weight of Giftedness and Self Concept ( $\lambda GS \leftarrow SC = .004$ ), the measurement error of the variable Psychological Well Being ( $\zeta PWB = .002$ ) and the measurement error of the Likeability Scale ( $\delta LS = .054$ ). These results suggested the removal of the Self-Concept Scale from the model, which supported the Hypothesis 1 of this research question. In this sample data, no significant relationship was observed between Gay Identity and Self Concept.

# Research Question #4: Do the correlation between the responses to the items and other constructs exhibit significant differences based on ethnicity?

Since the SEM analysis suggested the removal of the latent variable Ethnic Identity from the model, this research question could not be answered with this analysis results. Moreover, since the model modification suggested that the items piloted were measuring one factor, the results could not be used to answer Hypothesis 1 of this question: A stronger positive relationship will be observed between the scores of the Individual Identity – Synthesis scale and ethnic identity when compared with the relationship between the responses to the Group membership – Synthesis Scale and ethnic identity among gay men of color located in the Synthesis phase.

This researcher conducted a post hoc ANOVA analysis to examine if there was a relationship between Gay Identity and Ethnic Identity. The Table XXXIX shows the results of this analysis.

## Table XXXIX

Source	Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	2.760	4	.690	3.332	.014
Intercept	9.894	1	9.894	47.779	.000
Sense of belonging	.374	1	.374	1.805	.183
Identity Achievement	.040	1	.040	.193	.661
Ethnic Behaviors	.474	1	.474	2.289	.134
Other Group Orientation	.829	1	.829	4.001	.049
Error	18.430	89	.207		
Total	1077.245	94			
Corrected Total	21.190	93			

## ANOVA of Ethnic Identity With Gay Identity As Dependent Variable

With the exception of the intercept, none of the F tests were significant. Therefore, it can be concluded that, in this sample data, there is not a significant relationship between gay identity and ethnic identity.

#### **CHAPTER IV**

#### Discussion

The purpose of this study was to empirically test a part of McCarn and Fassinger's Sexual Minority Identity Formation Model. More specifically, this study preliminarily tested the Gay Individual Identity – Synthesis (GIISS) and the Gay Group Membership – Synthesis (GMSS) scales, each one containing 10 items purported to measure the Synthesis phases in the Individual Identity Formation and Group Membership processes depicted by McCarn and Fassinger's (1996) model.

The first research question was: Are the items reliable and precise enough to grant further development of the items for research and clinical uses? Results indicated that all but two measurement instruments (Stage 1: Confusion and Stage 2: Pride) have good internal consistency and consist of items that are reliable enough. The reliability results indicated that the items from the piloted measures GIISS and the GGMSS are consistent and reliable.

The second research question was: Is gay identity a bidimensional construct that comprises individual identity formation and group membership formation? The results suggested the presence of three factors. Moreover, the analyses indicated that the items of the GIISS and the GGMSS were not grouped as expected. Each factor grouped items from both the GIISS and the GGMSS. This research question had a related hypothesis: Significant differences will be observed between the scores of the Gay Individual Identity – Synthesis Scale (GIISS) and Gay Group Membership – Synthesis Scale (GGMSS). The results did not support this hypothesis. The results from the factor analysis suggested that McCarn and Miller's items included in both the GIISS and the GGMSS measure only one

dimension of gay identity, whereas the items developed by this researcher measure two dimensions. However, these dimensions did not correspond to individual gay identity and gay group membership as the factors grouped items from both the GIISS and the GGMSS.

The third research question was: Do the responses to the items correlate with other constructs in a manner that is consistent with the external model? This research question had four related hypotheses. The first hypothesis was that no significant relationship will be observed between the scores of the Gay Individual Identity -Synthesis Scale (GIISS) and the Gay Group Membership – Synthesis Scale (GGMSS) and the scores of the Six-Factor Self-Concept Scale. The results from the SEM analyses supported this hypothesis, as they suggested that Self Concept should have been removed from the model. Furthermore, the correlation between Gay Identity and Self Concept in every step of the SEM suggested a very low relationship between these variables. The second hypothesis was that a significant positive relationship will be observed between the responses to the items included in the Gay Individual Identity - Synthesis Scale and the Psychological Well Being Scales. This hypothesis could not be answered with the sample data because it did not support the structure of the measure GIISS and GGMSS. This situation was similar for the third hypothesis: A significant positive relationship will be observed between the scores of the Gay Group Membership – Synthesis Scale and the Psychological Well Being Scales. However, the modified model suggested a possible relationship with Psychological Well Being. Interestingly, the relationship purported by this model is not positive but inverse. The fourth hypothesis was that differences in the scores in the Gay Group Membership – Synthesis Scale will be observed based on the

scores in the Multigroup Ethnic Identity Measure. This hypothesis could not be tested with the sample data as it did not support the presence of the variable Ethnic Identity in the model. This suggested that, in the case of the sample data, there is little or no relationship between gay identity and ethnic identity.

The fourth research question was: Do the correlation between the responses to the items and other constructs exhibit significant differences based on ethnicity? This question had a related hypothesis: A stronger positive relationship will be observed between the scores of the Individual Identity – Synthesis scale and ethnic identity when compared with the relationship between the responses to the Group membership – Synthesis Scale and ethnic identity among gay men of color located in the Synthesis phase. This hypothesis could not be tested because the sample data did not support the structure of the GIISS and the GGMSS. Furthermore, the results suggested that gay identity and Ethnic Identity are not correlated. Still, a post hoc analysis was run to examine any possible relationship between these two variables. However, these results did not support a relationship between these variables in the sample data.

The reliability results indicated the items included in the GIISS and the GGMSS are items reliable and precise enough to grant further development of the items for research and clinical uses. However, the item #7 ("I still get angry at the way homosexuals are treated but not as much as once I did.") exhibited some problems regarding its factor loadings during the exploratory factor analyses. This result might be explained in terms of the item complexity. This item actually contains two ideas (i.e. "getting angry" and "but not as much") and a negation particle ("not"). Also, it is possible that the sample participants may have had some problems with the item because

the way it is redacted may be misconstrued as not caring enough for other gay men. In other words, it could be read as if once the individual used to care for other gay men but now that is not necessarily true.

The results from the exploratory factor analyses did not support the idea of gay identity as a bidimensional construct. The best description of this construct according to the sample data is a three-dimensional variable. Furthermore, the item location in factors did not support the structure of the GIISS and the GGMSS. An examination of the mean scores of these two instruments revealed that the sample appeared to be in the higher levels of gay individual identity and gay group membership development. Furthermore, a considerable majority of the participants had already done some type of disclosure about their sexual orientation. It is possible that the responses to the items of both GIISS and GGMSS were highly correlated due to characteristics of the sample while picking up some other undocumented differences resulting in the presence of three dimensions.

The results indicating a lack of significant relationship between Self Concept and Gay Identity are consonant with this researcher's expectations. As it was noted previously, self concept is a broader construct, while identity is more specific and related to particular situations (Troiden, 1984). The scarce research done in this area (Larson, 1985) revealed that no significant changes occur in self concept based solely on sexual orientation. An individual has only one self concept constituted by multiple identities. Therefore, elements like self concept complexity (how many identities constitute the self concept) and self concept clarity (how defined is the self concept) may have more importance than a single identity.

The results suggested an inverse relationship between gay identity and psychological well being. This is probably one of the most written about and researched areas in the field of LGBT issues. Previous theoretical papers and published research findings have suggested a positive relationship between gay identity and psychological well being based on the negative effects of internalized homophobia (DeLuca, 1967; Dunkle, 1994; Hooker, 1965; Halpin & Allen, 2004; Igartua, Gill & Montoro, 2003; Kertzner, Meyer & Frost, 2009; Miranda & Storms, 1989; Sagir, Robins, Walbran & Gentry, 1970; Szymanski & Gupta, 2009). However, this work paid little attention to the role of social support and the perception by members of the LGBT community. This situation may bring additional stressors as these participants may or may not have enough family or social support. Being gay has been conceptualized as a minority status. Actually, McCarn and Fassinger's model is called Sexual Minority Identity Formation model. Along this line, a gay man can experience what is known as minority stress. The visibility as a member of the LGBT community may add stressors that undermine the person's perceived psychological well being. As it was previously stated, the sample appears to be in the higher levels of gay identity development and has already engaged in some form of public disclosure of its sexual orientation. It is possible, then, that the participants in this study may feel lack of adequate social support, which translates into feelings of stress detrimental to their well being.

The results did not suggest a relationship between gay identity and ethnic identity. Even though the sample reported higher scores in the gay identity measures and lower scores in the ethnic identity subscales, this difference did not translate into an inverse relationship between these two variables among gay men of color suggested by the scarce

published theoretical papers. One possible explanation is that the Multigroup Ethnic Identity Measure may not be a good instrument to measure ethnic identity within gay men of diverse ethnic extractions. Examining the perceptions of the importance of perceived ethnic identity was beyond the scope of this study. However, since the post hoc analysis examined differences based on ethnicity, no significant differences should be expected if the participants did not give much importance to this aspect, either because they do not think about it or they decided to be gay over belonging to their ethnic community. Another explanation for this result is that it may be a consequence of the sample size. Even though the confirmatory analyses were run by the software program, the goodness-of-fit index of the model did not reach the desired levels. For confirmatory factor analysis, a ratio of 5 participants per item is recommended. However, since this investigation is a pilot study, the sample size of these analyses was only 94. This may have introduced statistical problems that are reflected in an apparent lack of relationship between these two variables.

#### Implications

The results of this pilot study indicate the need for further research to examine issues of dimensionality of gay identity as a construct. Some evidence was found to support the idea of gay identity as a multidimensional construct and its relationship to psychological well being. Furthermore, as expected, it suggested little or no relationship with the construct of self concept. However, issues related with sample size prevented this researcher from making any definitive conclusions. It is important to remember that this study was a pilot conducted to test a research design.

The sample data did not support the proposed full model, specifically the presence of ethnic identity. Again, sample size and its influence on the statistical analyses may have affected this result. Furthermore, the fact the instruments used to measure gay identity were either in development (GIISS and GGMSS) or had exhibited problems in previous studies (GIQ), calls for caution when reaching conclusions about this relationship. The scarce qualitative research on gay identity and ethnic identity suggests an interaction between these two variables. Solid measurement instruments may tap into this relationship in ways that findings can generalize to a larger population.

In terms of applied implications, it is too soon to ascertain that the piloted scales are an adequate measure of individual gay identity and gay group membership status. However, results suggested that the relationship between gay identity and psychological well being might be a complex one that requires openness and a critical attitude of our own perceptions when working with LGBT clients. More than following a particular model of gay identity development, it is important that the therapist becomes aware of how other identities may interact with that developmental process.

#### Limitations

This pilot study had some limitations that require attention. One of these limitations was sample size. The analyses required a ratio of 5 participants per item. With 205 items to answer, that would have required a sample of, at least, 1,025 participants. However, since this was a pilot study, this researcher did not recruit that number of participants. The final sample for this study was constituted by 94 participants, which barely provided adequate variance for running analyses. The intention of conducting a pilot study was to test the research design to examine its adequacy and suggesting

possible improvements. Therefore, caution should be exerted in generalizing these results to the population. Another limitation is related to the recruitment technique. Using a website to collect the data did not improve significantly the possibility of recruiting a more varied sample. The demographic data showed that the sample was located in the higher levels of gay identity development at the moment of data collection. Finally, the instruments used to measure gay identity were either under development (GIISS and GGMSS) or have presented problems in previous studies. There are only two instruments to measure gay identity development. Cass (1984) developed an instrument when testing her model but warned against its use as it did not support her model. Brady and Busse (1994) developed the GIQ based on Cass's model. This instrument has not been frequently used as it may have some validity issues. However, this researcher included this instrument in the research design because it was the only one with which the GIISS and the GGMSS could be compared. Since the GIQ has a binomial scale (only one of two possible responses per item), variance may be compromised.

### **Future directions**

This study was a pilot to develop the GIISS and the GGMSS. In terms of the development of the piloted measures, it is important to recruit a sample with bigger size and more variance in order to improve the statistical analyses. Also, it is recommended to step back and start by testing a simpler model including only psychological well being as a variable. Once there is a sufficiently solid instrument to measure gay identity, then the relationship with ethnic identity may be examined from a quantitative perspective. Certainly more exploratory analyses of the piloted measures with bigger samples are needed before conducting confirmatory analyses. Finally, a longer period of data

collection combining various techniques would be recommended to increase the size of the sample. These techniques will have to consider the physical presence of the researcher in the process of collecting data. For example, visiting LGBT interests groups will imply having a face attached to a name, which can facilitate data collection through the snowballing technique. Also conducting a focus group with members of the community may foster an exchange of ideas that, when implemented, will improve the research design, particularly the data collection process.

From a theoretical perspective, once the measures are developed, it is important to further examine the relationship between gay identity and ethnic identity. Since the research in this area is currently scarce, future studies should combine quantitative and qualitative techniques in a way their results can inform each other.

## Appendix A

## GIISS and GGMSS

Gay Individual Identity Scale - Synthesis and Gay Group Membership Scale - Synthesis

- 1- I feel a deep contentment about my love for other men. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 2- I love and appreciate myself as a man that loves and is sexual with other men. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 3- Loving and being sexual with other men is part of how a see myself. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 4- My love for men is an important part of me, but is not the only thing that defines me. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 5- I have successfully incorporated my love of men into my life. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)

- 6- I'm doing what I want to do in terms of love and sex; that makes me feel more integrated as a person. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 7- I still get angry at the way homosexuals are treated, but not as much as once I did. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 8- Being gay or straight is one central part of who people are. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 9- Some straights are homophobic, some are not. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 10- I can relate comfortably to gays and nongays. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 11- I rely on my gay/lesbian friends for support but have some good straight friends as well. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)

- 12- I am a member of the gay community. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 13- I don't feel guilty about my attraction to and love for other men. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 14- Loving and being sexual with men is part of who I am. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 15- Being in a relationship with another man is important to me, but it is not the only thing that defines me. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 16- I feel comfortable interacting with both straight and gay people. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 17- I enjoy having straight and gay friends. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)

- 18- I think it is important for me to get along with straight and gay people. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 19- When I meet somebody I don't think solely of him/her in terms of hi/her sexual orientation. (Group)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)
- 20- I feel proud of being gay, as I am proud of other aspects/characteristics of me. (Individual)
  - a. Strongly Agree (1)
  - b. Agree (2)
  - c. Disagree (3)
  - d. Strongly Disagree (4)

## Appendix B

## Informed Consent

- We would like you to participate in a research study titled "A pilot study to develop the Gay Individual Identity – Synthesis (GIISS) and the Gay Group Membership – Synthesis (GGMSS) scales for gay men based on McCarn and Fassinger's (1996) Sexual Minority Identity Formation Model". The purpose of this study is to develop an instrument that will measure gay identity development. We are also interested in examining how gay identity development is related to how gay men feel about themselves and how they relate to friends and family. By participating in this research you will help to develop a measure that will enable mental health practitioners to identify the specific needs of gay clients in ways that will foster a healthy gay identity development.
- 2. If you decide to participate in the study, your involvement will take about 40-45 minutes of your time. You will be asked to answer the questionnaires included this website.
- 3. We do not anticipate that your participation will result in any risk for you. Your participation will be completely voluntary and you will be free to refuse or stop at any time without penalty.
- 4. All information will be number-coded and strictly confidential. Your privacy will be protected to the maximum extent allowable by law.
- 5. At the end of the survey, you will have the opportunity to enter a raffle for one of three \$50.00 cash prizes. You only have to provide a valid email address so the researcher could contact you. These email addresses are collected in a different webpage to protect your anonymity.
- 6. If you have any questions about this study, please, feel free to contact us:

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- If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of his study, you may contact-anonymously, if you wish, Ashir Kumar, M.D., Chair of the University Committee on Research Involving Human Subjects (UCHRIS) by phone: (517) 432-4503, email: <u>uchris@msu.edu</u>, or regular mail: 202 Olds Hall, East Lansing MI 48823.
- 8. Before you leave this window please print a copy of this informed consent for your records.
- 9. Click on Accept to start participating in the study.
- 10. Thank you for your cooperation.

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