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Sport as a dangerous environment: A research on homophobia and bullying in sports-related contexts

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Summary

General Introduction

Physical activity is an important determinant of health and overall well-being because improves one's quality of life and reduces the risk of mortality. For example, low levels of physical activity are associated with increased risk for adverse health outcomes, such as coronary heart disease and cancer, and poor mental health throughout the lifetime (Cooper et al., 2000; Nelson, Lust, Story, & Ehlinger, 2008; Zelli, Reichmann, Lucidi, & Grano, 2007). However, some studies suggested that sports-related contexts may be a particularly problematic setting with remarkable homophobic and heterosexist behavior (Eng, 2008; Griffin, 1993, 1998; Herek & Garnets, 2007; Meyer, 2003; Peguero, 2008; Symons et al., 2010; Volk & Lagzdins, 2009). This could be especially true for the health and well-being of lesbian, gay, bisexual, transgender and all other sexual orientations and gender identities that persons may identify with (LGBT+), who tend to be an 'at-risk' group due to prejudice and discrimination suffered.

Connell's (1990) theory of hegemonic masculinity argued that sports represent a belief system that privileges heterosexuality and gender conformity relative to sex assigned at birth, stigmatizing other sexual orientation or gender expression, due to a cultural idealization of masculinity. However, several recent researches underline a rapid decrease in negative attitudes toward sexual minorities and homophobic bullying in sports-related contexts (Anderson, Magrath, & Bullingham, 2016), especially in countries as U.S. (Anderson et al., 2016), UK (Cleland, Magrath, & Kian, 2016) and Australia (McCann, Minichiello, & Plummer, 2009).

To our knowledge, no quantitative study examined the Anderson's results about the decline of homophobia in Italian sports-related contexts. In fact, as we will see during this dissertation, the Italian situation is unique due to the influence of the religiosity on the development of moral, social and ethical values. Moreover, Italy is a country where sexism

and stigma around homosexuality are widespread (Lingiardi et al. 2016) and it is one of the slowest countries of the European Union to regulate civil rights for sexual minority people and other fundamental rights are not still recognized. In such a stigmatizing context, the decline of homophobia seems less likely than other countries and the main purpose of this project was to investigate the levels of negative attitudes toward sexual minorities and homophobic bullying in Italian sports-related contexts.

Moreover, the project presented in this thesis concerned also two representative U.S. sample (i.e. the Texas sample and the California sample). These representative data were used to investigate the role of victimization and feelings of safety at school on health behaviors, such as the levels of physical activity, but also healthy and unhealthy eating habits. In doing so, we aimed to contribute to an understanding how discrimination and victimization may increase the risk of developing unhealthy and problematic behaviors, such as lower levels of physical activity and highlighting the necessity of policy interventions regarding safety and violence prevention in Western countries.

In this way, we will report empirical data on homophobia, victimization and physical activity both in Italian samples and U.S. samples, and we will analyze the influence of individual, relational, and internalized characteristics in predicting maladaptive behaviors in LGBT+ individuals as well as in heterosexual people. Given that several studies reported that transgender people often experience a sort of discrimination significantly different from lesbian, gay or bisexual persons and that they face unique stigma associated with their gender identity or gender expression, we decided to dedicate a specific chapter to this representative sample of transgender students (chapter 4).

This dissertation is divided in *four chapters*, containing *six studies* that are closely related to each other. In more detail, we developed and administered survey questionnaires to capture information on levels of homophobia among different Italian sample (both

sports participants and non-participants) in the first four studies. The protocols were approved by the Ethics Commission of the Department of Developmental and Social Psychology of the Sapienza University of Rome. In addition, in order to analyze the role of physical activity and victimization also in other countries, we used two representative sample of the U.S. population for the *fifth* and *sixth study*: The *study 5* used data from the 2017 Texas Youth Risk Behavior Survey (YRBS), while the *study* 6 analyzed data from the 2013–2015 California Healthy Kids Survey (CHKS). I worked with these National databases during my visiting scholar period at the University of Texas at Austin (USA), from February 13, 2018 to May 17, 2018, under the supervision of Stephen T. Russell, Distinguished Professor at Population Research Center, Human Development and Family Sciences.

All studies have been published or submitted in international scientific journals (according to the doctoral regulations of the Department of Developmental and Social Psychology of Sapienza University of Rome). A reference to the journal for each manuscript published in or submitted to are presented on references section.

Chapter 1 is focused on providing an overview of the existing literature about homophobia in sports-related contexts (section 1.1), victimization and bullying in sports setting and school context (section 1.2). Moreover, we also included an overview of the research on adverse weight-related behaviors, such as physical inactivity and poor dietary intake among heterosexual people as well as LGBT+ people (section 1.3).

Chapter 2 comprised three studies. The *first* and *second studies* aimed to develop and validate a measurement scale that assesses and captures negative attitudes toward sexual minorities in sports-related contexts both in Italian heterosexual athletes and LG athletes. Currently, the paper summarizing this research was published in *Journal of Homosexuality* (Baiocco, Pistella, Salvati, Ioverno, & Lucidi, 2018c, *in press*). In

particular, the *first study* established the factor structure of the Sexual Prejudice in Sport Scale on 297 heterosexual athletes. The *second study* tested the reliability and validating of the resulting 19 item scale on 311 heterosexual athletes and 160 LG athletes. As we will report in more detail, the exploratory factor analysis yielded three-factors: *open-rejection*, which assesses the blatant prejudice expressed toward lesbian/gay people; *denial of visibility*, which evaluates attitude toward the coming-out of lesbian/gay people; and *gendering performance*, which corresponds to gender stereotypes about performance/skills of lesbian/gay people. Internal consistency, test-retest stability, and convergent/divergent validity show that the SPSS may be considered as a valid and reliable instrument.

The *third study* aims to extend knowledge about sexual prejudice (in terms of *open-rejection, denial of visibility* and *gendering performance*) in sports-related contexts and coming-out processes in a sample of 176 LG athletes. Currently, the paper summarizing this research was submitted in *International Journal of Sexual Health* (Pistella, Rosati, Ioverno, Lucidi, & Baiocco, *submitted*). In doing so, we used the new scale to verify if higher levels of *denial of visibility* (i.e. propensity to deny the presence of lesbian/gay people in their own sports-related contexts) would be a mediator in the relationship between coming-out to family members and coming-out in sports.

Chapter 3 contained the *fourth* and *fifth studies*. Specifically, the *fourth study* had the purpose of further exploring the prevalence of bullying and homophobic bullying in sports-related contexts. This *study* used a sample of 88 Italian gay men and 120 heterosexual men to examine the relationship between bullying in sports, the dropout rate of sports due to fear of being bullied, self-hatred, and internalized sexual stigma. Currently, the paper summarizing this *study* was published in *Journal of Gay and Lesbian Mental Health* (Baiocco, Pistella, Salvati, Ioverno, & Lucidi, 2018b, in press).

The aim of the *fifth study* is to examine the interaction effect of gender, sexual identity and peer victimization in predicting unhealthy weight control behaviors (UWCB). This *study* used a representative sample of Texas students (1,754 heterosexual students; 313 sexual minority students) to determine whether the effect of peer victimization on UWCB was strongest among sexual minority males, after controlling for age, ethnicity, body weight, physical activity, and perceptions of non-parental adults' support. Results suggest that sexual minority males are at risk for use of UWCB and underline the need for future research to investigate the relationship between victimization and unhealthy behaviors. Currently, the paper summarizing this research was submitted in *International Journal of Eating Disorders* (Pistella, Ioverno, Russell, *submitted*).

Chapter 4 presented a single study, utilizing a population-based study of 31,609 students (M_{age} = 14.04; 1.1% transgender). The aim of the *sixth study* is to examine gender identity differences in perception of school safety and weight-related health behaviors (WHB), such as physical activity, and healthy/unhealthy eating habits. Additionally, we investigated the relationship between school safety and the aforementioned WHB, after taking into account the moderating effect of gender identity (transgender *vs.* non-transgender people). Results suggest that when the school context is not perceived as a safe space, there were no differences in healthy eating habits between transgender and non-transgender students; differences were significant, however, when the school was perceived as safe. School interventions are needed to reduce WHB disparities between transgender and non-transgender youth. Currently, the paper summarizing this research was submitted in *Appetite* (Pistella, Ioverno, Rodgers, & Russell, *submitted*).

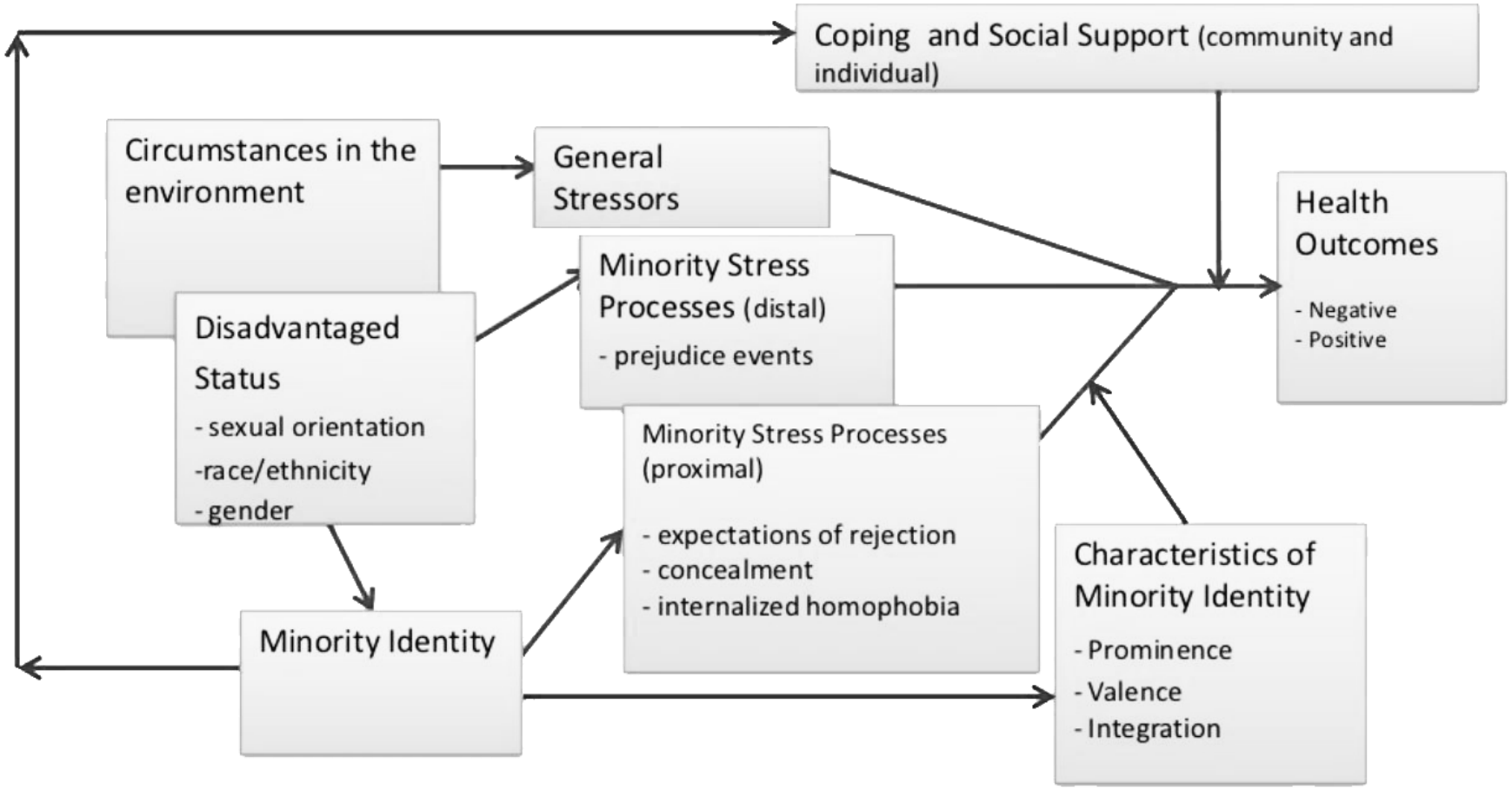
Thus, although there is an introductive chapter to explain the existing literature on homophobia in sports, bullying, and UWCB in LGBT+ people as well as in heterosexual people (chapter 1), each chapter will introduce briefly the theoretical framework, the

rationale and the hypotheses of the study. Clinical and research implications for the present work of thesis are discussed in the conclusion.

Finally, the theoretical framework within which the studies are located and that has been used to understand the impact of stigma on LGBT+ individuals is the minority stress model (Meyer, 2003; see Figure 1), in which the prejudice, stigma, and experiences of discrimination constitute unique, chronic, and psychosocial stressors: Minority stress processes are caused by objective events and conditions (i.e. distal experiences of minority stress), such as discrimination and violence, and a more subjective status (i.e. proximal experiences of minority stress) such as expectations of rejection and discrimination (with corresponding vigilant and avoidance behavior), and internalized sexual stigma (Lindquist, Livingston, Heck, & Machek, 2017; Lingiardi et al., 2012; Meyer, 2003).

The most insidious effect of the minority stress processes upon the sexual minorities is internalized sexual stigma (Lingiardi et al., 2012; Meyer, 2003). Several studies have shown that minority stress is correlated with negative effects on physical and psychological health (D'Augelli, Hershberger, & Pilkington 1998; Herek & Garnets 2007). However, the outcomes of this process are influenced by various personal and situational variables, such as characteristics of the identity (prominence, valence, and integration), individual competence (for example coping strategies) or community's support. Thus, these factors can reduce symptoms of mental illness and improve positive mental health in the LGBT+ population.

Figure 1. Minority stress processes in sexual minorities (Meyer, 2003)



Chapter 1. Is sport a dangerous environment?

1.1 A rapid decrease in cultural homophobia in sports

A definition of sexual prejudice

Studies indicate that *sexual prejudice* is a preferable term to homophobia because it represents an umbrella category which includes heterosexism, homonegativism, homophobia, and, more recently, biphobia and transphobia. Herek and McLemore (2013, p. 312) asserted that sexual prejudice is defined as "a negative attitude toward an individual based on her or his membership in a group defined by sexual orientation". Considerable studies have documented the persistent sexual prejudice of many sport settings (Brackenridge, Allred, Jarvis, Maddocks, & Rivers, 2008; Connell, 1990; Griffin, 1998; Hekma, 1998; Krane, 2001; Plummer, 2006; Pronger, 1990; Shang, Liao, & Gill, 2012). Lesbian and gay negative attitude has been found to occur through verbal comments, social isolation, negative stereotypes, and homophobic harassment within sport environments.

Most of the literature suggests that older athletes and men tend to have more negative attitudes toward lesbian, gay, bisexual, and transgender people (LGBT+) than do younger athletes and women (Cunningham, 2012; Gill, Morrow, Collins, Lucey, & Schultz, 2006; Laberge & Albert, 1999; Shang & Gill, 2012), respectively. Moreover, some studies have found (Anderson, 2002; Griffin, 1998) that team sports athletes report higher levels of sexual prejudice than do individual sport athletes, although other studies did not find any significant differences (Adams, Anderson, & McCormack, 2010; Anderson & McGuire, 2010; Pistella & Baiocco, 2017). To the contrary, several recent studies highlight a progressive decline in cultural and institutional homophobia in sport

environments (Adams et al., 2010; Anderson, 2009a, 2009b; Anderson, Magrath, & Bullingham, 2016; Anderson & McGuire, 2010; Bush, Anderson, & Carr, 2012; McCormack, 2011).

The literature provides some qualitative and quantitative studies specifically addressing sexual prejudice in sport environments (Anderson & Mowatt, 2013; Morrow & Gill 2003; Piedra, 2016; Piedra, García-Pérez, & Channon, 2017; Sartore & Cunningham, 2009; Shang et al., 2012). However, to our knowledge, this topic has not yet been investigated in Italian contexts. Recently, Scandurra and colleagues (Scandurra, Braucci, Bochicchio, Valerio, & Amodeo, 2017), in a sample of 30 Italian soccer teams, conducted a qualitative research through semi-structured focus groups to assess whether the decline of homophobia has occurred also in Italy. According to Anderson's findings (Anderson, 2002, 2009a; Anderson & McGuire, 2010; Bush et al., 2012), the authors found a rapid decline of homophobia and negative attitudes toward sexual minorities.

Existing measures of sexual prejudice in sports

Recently, studies about homophobia in sport settings have increased (Bush et al., 2012; Cunningham & Melton, 2012; Mullin, 2013; Piedra, 2016; Piedra et al., 2017; Ripley et al., 2012), and the need to use appropriate measures to capture the change process in the level of sexual prejudice in sports-related contexts has become markedly prominent. Existing research on sexual prejudice in sport environments have used either the scale developed by Raja and Stokes (1998), called the Modern Homophobia Scale (Forbes, Lathrop, & Stevens, 2002) or the scale developed by Herek (1988), called Attitudes Toward Lesbians and Gay Men (Anderson & Mowatt, 2013; Ensign, Yiamouyiannis, White, & Ridpath, 2011; Gill et al., 2006; O'Brien, Shovelton, & Latner, 2013; Oswalt & Vargas, 2013; Roper & Halloran, 2007; Sartore & Cunningham, 2009), to examine the negative attitudes toward sexual minority people in sports-related contexts.

However, these measures were not developed to assess the negative attitudes in specific contexts, such as in the area of sports, where there may be different kinds of stereotypes and prejudices related to its traditionally heterosexist and homophobic climate. Other research (Drummond, Filiault, Anderson, & Jeffries, 2015; Gill, Morrow, Collins, Lucey, & Schultz, 2010; Shang & Gill, 2012) used a single item to gauge the attitudes toward sexual minority athletes, or developed measures specifically designed for their study (Bush et al., 2012; Cunningham, & Melton, 2012; Ripley, Anderson, McCormack, & Rockett, 2012).

The Perceptions of Homophobia and Heterosexism in Physical Education scale (PHHPE; Morrow & Gill, 2003) is another commonly used scale of negative attitudes toward sexual minority people in sports-related contexts. The PHHPE assesses the perception of homophobic and heterosexist behaviors within physical education from both teachers and students by asking them to what degree the physical education teachers created a safe space for LGBT+ students or to what degree they observed or experienced homophobic and heterosexist behaviors during the lesson of physical education. However, this scale does not reflect the specific prejudices or attitudes toward sexual minorities in sports-related contexts, but it explores the rates of homophobic and heterosexist behaviors in physical education context. Moreover, to our knowledge, no previous study has examined the psychometric properties of the aforementioned instruments.

On the same way, the Attitudes toward Gay and Lesbian Athletes scale (Shang et al., 2012) was adapted from the Attitudes toward Homosexuals in the Military scale (Estrada & Weiss, 1999), and data concerning the characteristics of the scale (14 items) or its psychometric properties are not provided. More recently, the Heterosexist Attitudes in Sport—Lesbian scale (Mullin, 2013) was delimited to evaluate only the attitudes toward lesbians in women's collegiate athletics and was not designed to capture the attitudes

toward gay men or toward all other gender identities and sexual orientations that individuals may identify with.

The Attitude Scale Toward Sexual Diversity in Sport (EDSD; Piedra, 2016), and the Scale on Tolerance in Sport (STS; Piedra et al., 2017) are two recent scales of attitudes toward sexual minority people in sports. The EDSD is an 18-item scale reflecting four dimensions: (a) cognitive attitudes, (b) attitudes toward gender stereotypes, (c) attitudes toward transgression, and (d) affective attitudes. However, an important limitation of the scale relates to the structure of the final measurement model. In fact, there is one factor with only three items, in which the wording of two of them is the opposite to each other (e.g., "if I had a son, I would enjoy watching them practicing rhythmic gymnastics" and "if I had a son, I would not feel at ease if he wanted to practice rhythmic gymnastics or any other mostly 'feminine' sports"). In addition, the scale includes items that are not appropriate indicators or are redundant.

The STS (Piedra et al., 2017) contains the original 32 items of the EDSD and two dimensions: (a) non-rejection and (b) acceptance. Exploratory and confirmatory factor analyses demonstrated the construct validity of the measure in English and Spanish versions. However, this scale showed several limitations. First of all, this questionnaire included twenty questions worded in a negative direction (acceptance) and twelve questions worded in a positive direction (non-rejection), in which the wording of some items were the opposite of each other. In addition, these two dimensions do not consider the multidimensionality of sexual prejudice in sports-related contexts.

Conceptualizing attitudes toward sexual minorities in sports

The literature on negative attitudes toward LGBT+ distinguished between traditional forms of prejudice and more modern, subtle manifestations (Pettigrew & Meertens, 1995). Applying this theoretical perspective to the sport contexts (i.e., traditional

versus modern prejudice), the rejection and blatant attacks may be considered as traditional manifestations of prejudice that are related to the avoidance and removal of LGBT+ athletes/coaches and the maintenance of negative attitudes toward them (Anderson, 2010; Cárdenas Castro, 2010). To the contrary, modern forms of prejudice include negative attitudes related to visibility and coming-out of sexual minorities (Anderson, 2014; Cavalier, 2011), and gender stereotypes about performance and the skills of LGBT+ athletes/coaches (Bush et al., 2012; Hargreaves & Anderson, 2014; Hekma, 1994; Wolf-Wendel, Toma, & Morphew, 2001). Traditional prejudice and blatant statements are still present in society and sport-related contexts but are increasingly less accepted in the public sphere (Burridge, 2004). Consequently, there is the emergence of subtle and modern prejudice that is less visible and is characterized by indirect behaviors against sexual minority people.

Griffin (1992) has proposed an interesting theoretical framework for assessing the multidimensionality of sexual prejudice in sports-related contexts. The author, according to Pettigrew and Meertens' theory (1995), defines sexual prejudice toward lesbian women in sport through six forms, which represent traditional forms of prejudice (attack and apology) but also modern forms (silence, denial, promotion of a heterosexual image, and gender preferences). *Attack* manifestation refers to avoiding, open rejection, and opposition to proximity to and contact with lesbian/gay athletes/coaches. The *silence* and *denial* themes (Anderson, 2014; Hekma, 1994) represent a manifestation of the "don't ask, don't tell" culture, a hidden system of stigmatization that attempts to nullify and deny lesbian/gay athletes' visibility and existence.

The *apology* and *promotion of a heterosexual image* describes the pressures to conform to masculine/feminine gender norms, in the first case, and a more explicit display of a heterosexual image in the second case (i.e., the spread of stories about married athletes

and coaches with opposite-sex partners). *Gender preferences* refers to preconceived ideas and to previous judgments that reflect the views of society on both men and women, so that the male athlete/coach is more likely to have higher levels of performance and achievement in sports than women. However, Griffin (1992) did not consider sexual orientation differences: For instance, some studies (Bush et al., 2012; Hargreaves & Anderson, 2014; Hekma, 1994; Wolf-Wendel et al., 2001) reported that gay men were considered to be less able in sports than heterosexual men, while lesbian women were perceived as more masculine and, consequently, more competent in sports than gay men and/or heterosexual women.

Thus, the Griffin's study (1992) suggested that sexual prejudice in sports-related contexts is a multidimensional construct and should be measured either separately or together from other instruments of general sexual prejudice used in literature (Estrada & Weiss, 1999; Herek, 1988; Morrow & Gill, 2003; Raja & Stokes, 1998; Shang et al., 2012). Thus, the *study 1* (see 2.1 section, p. 31) and *2* (see 2.2 section, p. 41) addressed this gap by developing and validating a new measure in a group of both heterosexual and lesbian and gay athletes.

The role of sexual prejudice on coming-out in sports

Research on coming-out in sports-related contexts (COS) is characterized by a lack of quantitative empirical studies. Coming-out is a central component of the experience of sexual minorities in the Western countries: It is described as the process by which sexual minorities accept their sexual orientation and choose to reveal it to others (Rosario, Hunter, Maguen, Gwadz & Smith, 2001). The coming-out process generally represents an increasing adaptiveness of sexual minorities with their own sexual orientation. It has been described as a crucial component in LGBT+ identity formation and integration (Cass, 1979) because it influences several aspects of mental health (Rosario et al., 2001; Savin-

Williams, 1990). Identity integration includes both acceptance of one's sexual identity and reduction of the cognitive dissonance due to the internalization of negative evaluations of sexual minority people. Most of the literature showed that the coming-out is associated not only with positive outcomes for sexual minorities' mental health, such as higher levels of life's satisfaction, well-being (Griffith & Hebl, 2002), and self-esteem (Henry, 2013), but also lower depression, anxiety, and emotional relief (Monroe, 2000).

Current research (Hekma, 1994, 1998, Krane & Barber, 2005) suggested that lesbian and gay athletes tend to conceal and/or deny one's sexual orientation in sports-related contexts. This tendency reflects a *don't ask don't tell* culture in which both athletes and teammates colluded in silencing the sexual minorities' experiences (Anderson, 2014; Forbes et al., 2002; Hekma, 1994; Pistella & Baiocco, 2017). This attitude is often associated with an attempt to conform to heterosexist norms (Griffin, 1993; Krane & Barber, 2003). Moreover, some authors highlight that coming-out in sport environments may be perceived as dangerous by sexual minority athletes because it may be associated with negative consequences, such as bullying, isolation or discrimination (Baiocco, Pistella, Salvati, Ioverno, & Lucidi, 2018b; D'Augelli, Pilkington, & Hershberger, 2002).

Moreover, sports environments reproduce and reinforce a cultural idealization of traditional masculinity (Baiocco et al., 2018b; Connell, 1990; Drummond et al., 2015; Eng, 2008; Griffin, 1992; 1998). The wider literature on the theory of hegemonic masculinity is described in the next section (pp. 20–21). In fact, some studies suggest that sexual minority athletes, in order to avoid discriminations and prejudices, tend to conform themselves to the heterosexist norms of sports environments (Griffin, 1993; Krane & Barber, 2003). For example, gay men might avoid sports activities generally associated with feminine gender (e.g. dance), while lesbian women who engaged in gender non-conforming activities (e.g. football or boxing) might tend to emphasize a heterosexual

image through a hyper-feminization of their aspect (Griffin, 1992; Holland, & Harpin, 2015).

Research on COS showed that lesbians were more likely to come out in sports-related contexts compared to gay men (Hekma, 1998). Consequently, lesbian athletes may face more discriminations due to their greater exposure and visibility in sport settings compared to gay men that remained "in the closet". Additionally, existing studies (Baiocco et al., 2018b; Hekma, 1998; Mette, Lecigne, Lafont & Décamps, 2012) showed higher levels of sexual prejudice (Curry, 1998; Kimmel & Messner, 2001) and difficulties to come out (Roper & Halloran, 2007) in team sports (e.g. football) and contact sports (e.g. boxing) compared to individual sports (e.g. swimming). Other studies suggested that team sports are more inclusive for lesbian women than for gay men (Caudwell, 1999; Pistella & Baiocco, 2017; Ravel & Rail, 2006).

The empirical literature on coming-out strongly focused on familiar, school, and friendship context (Baiocco, Di Pomponio, Nigito, Laghi, 2012; Harris, & Bliss, 1997; Legate, Ryan, & Weinstein, 2012), and extends to workplace (Chrobot-Mason, Button, & DiClementi, 2002; Griffith & Hebl, 2002; Prati & Pietrantoni, 2014) environments. Lesbian and gay people did not significantly differ in the rates of coming-out in these different contexts (Balsam & Mohr, 2007; Dewaele, Van Houtte, & Vincke, 2014; Pistella, Salvati, Ioverno, Laghi, Baiocco, 2016; Salvati, Pistella, Ioverno, Laghi, & Baiocco, 2018d).

In very recent years, research has begun to examine the coming-out to family members (COF): It is often described as the biggest challenge, since generally represents the first step of the entire disclosure process (Savin-Williams & Diamond, 1999). The majority of the studies focused on parents' reactions to disclosure (Heatherington & Lavner, 2008). The quality of parental or sibling's reactions to coming-out could affect the

psychological and behavioral health of sexual minority children (Savin-Williams, 1990) and represent protective or risk factors for sexual minority children's mental-health (Haxhe & D'Amore, 2014; Heatherington & Lavner, 2008; Rothman, Sulivan, Keyes & Boehmer, 2012; Ryan, Russell, Huebner, Diaz & Sanchez, 2010; Salvati et al., 2018d).

To date, the demographic and individual variables of both sexual minority children and their parents may influence COF. Furthermore, right-wing conservative political ideology and religiosity in the family have been shown to be negative predictors of COF (Newman & Muzzonigro, 1993; Schope, 2002), but religious involvement does not affect COF. On the contrary, the involvement in a stable relationship (Pistella et al., 2016) and the presence of other sexual minorities in one's social network seem to positively influence COF (Baiocco et al., 2012; Tropp & Pettigrew 2005).

Fewer studies have investigated coming-out in various contexts within the same study. Following this line, Griffith and Hebls (2002) found that LGBT+ participants that disclose their sexual orientation to family members are more likely to come out also in other important contexts of life, such as the workplace. Finally, unlike in one friends' network, social environments such as the workplace and one's sports environment are not freely chosen by individuals and LGBT+ workers and athletes could face similar dynamics with regard to the choice of coming-out. Therefore, it can be assumed that the extent to which people reveal their sexual orientation with their families influences disclosure also in their sports environment, especially in family-oriented culture such as Italy, in which this research was conducted. Despite this, to our knowledge, no study investigated the relationship between COF and COS, and the possible mediating role of internalized sexual prejudices toward the decision to reveal a non-heterosexual orientation in sport-related contexts. Thus, *study 3* (see 2.3 section, p. 52) addressed this gap by exploring this relationship in a group of Italian lesbian and gay people.

1.2 Victimization in sports-related contexts

Bullying and homophobic bullying in sports

Research on victimization (such as bullying and homophobic bullying) in sports environments have underlined that this multifaceted form of mistreatment and abuse is frequent in socialization contexts such as sports-related contexts, and it is clearly linked to the compromised mental health of youth (Evans, Adler, MacDonald, & Côté, 2016; Peguero, 2008; Shannon, 2013; Symons, Sbaraglia, Hillier, & Mitchell, 2010; Volk, & Lagzdins, 2009). Bullying is a form of aggression, based on an imbalance of power between peers, in which one or more individuals repeatedly and intentionally intimidate, harass or physically harm the individual who is less powerful with an intention to damage or disturb (Olweus, 1993). Homophobic bullying is the most common form of bullying (Brackenridge, Rivers, Gough, & Llewellyn, 2007; Prati, Pietrantoni, Buccoliero, & Maggi, 2010): It is the exploitation of a person's actual or perceived sexual orientation with the intention of causing fear or intimidation, often with the intention of inflicting psychological or physical harm. Homophobic bullying does not exclusively affect LGBT+ youth; it also affects people who are perceived as not conforming to traditional masculine or feminine gender roles, even if these people do not self-identify as sexual minorities (Poteat, Sinclair, DiGiovanni, Koenig, & Russell, 2013).

A comprehensive survey on the sports-related experiences of 308 sexual minority Australians (Symons et al., 2010), found that 43% of the athletes reported being targets of discrimination during their sports activities. Similar results were obtained in a longitudinal study on the incidence of bullying in schools in the United Kingdom (UK): In this study, Rivers (2011) showed that 50% of people identifying as LGBT+ experienced homophobic bullying in sports-related contexts. The European Union Agency for Fundamental Rights (2011) reported that of 93,079 LGBT+ people aged 18 or over, from 28 countries, nearly

half (42 %) reported avoiding sports clubs out of fear of being assaulted, threatened, or harassed due to their sexual orientation or gender identity. Specifically, gay men (53 %) were more likely to adapt their behavior in order to avoid such risks than lesbian and bisexual participants. In a study on 359 Canadian athletes, Evans and colleagues (2016) reported that bullying was less prevalent in sport compared with school, that 14% of participants experienced victimization in sports-related contexts and that male athletes were more likely to be victimized than female athletes. In addition, findings revealed that students who experienced higher bullying frequencies reported weaker connections with peers compared to those were not bullied.

Studies have recognized that many persons who identify as LGBT+ experience varying forms of homophobia and heterosexism in sports environments (Cavalier, 2011; Gill et al., 2010; Gilbert, 2000; Plummer, 2006; Shang & Gill, 2012). The intense homonegativity in sports-related contexts may be explained by the fact that the sports field has been culturally conceptualized as a training ground where young boys learn masculine skills and where the expression and admiration of physicality is central (Griffin, 1993; Rivers, 2001). Furthermore, unlike other public venues, the sports field allows men to openly demonstrate their emotional closeness to each other without fear of being harassed. In addition, many sports require physical contact and intimacy among boys, and this is perceived to be acceptable among athletes (Griffin, 1998). Consequently, the fact that an athlete is gay, bisexual or transgendered (GBT), will be associated to some form of sexual interaction or sexual gratification for the GBT individual interacting their team mates.

Furthermore, youth who are gender non-conforming (i.e. feminine men or masculine women) are more likely to experience victimization (Toomey, Ryan, Diaz, Card, & Russell, 2010), and, in turn, are at greater risk for negative psychosocial outcomes (D'Augelli, Grossman, & Starks, 2006), and social pressure to conform to the traditional

masculine/feminine gender role (Carver, Yunger, & Perry, 2003). Additionally, in a peer culture that demands conformity to masculine gender, gay men (or those perceived to be gay men) face greater pressure to choose a particular type of sport in preadolescence and adolescence than heterosexual youth, often due to gender-nonconforming behavior (Brackenridge et al., 2007).

Associations between bullying and mental health

Many studies report adverse mental health consequences in victims of bullying, such as social anxiety (Espelage & Holt, 2001; Poteat & Espelage, 2007), depression (Forster et al., 2013; Lindquist et al., 2017), loneliness (Juvonen & Graham, 2002), poor self-esteem (Arseneault, Bowes, & Shakoor, 2010) and suicidal thoughts (Peter, Taylor, & Campbell, 2016; Russell, & Toomey, 2013). Previous work in the area (Duarte, Pinto-Gouveia, & Rodrigues, 2015; Matos, Pinto-Gouveia, & Duarte, 2012) has suggested that the shame caused by bullying experiences may be the basis for negative self- perceptions or self-evaluation, such as self-hatred, self-inadequacy and low self-reassurance.

Negative self-perception is not a single process but has different forms (Gilbert, Clarke, Hempel, Miles, & and Irons, 2004): One was related to desires to try to self-improve and self-reassure and the other of feeling self-inadequacy and self-hate. The way people reassurance or criticize themselves, and encouraging, has shown to be strongly associated with well-being (Bluth, Campo, Futch, & Gaylord, 2017), also in LGBT+ people (Matos, Carvalho, Cunha, Galhardo, & Sepodes, 2017).

A meta-analysis by Cook and colleagues (Cook, Williams, Guerra, Kim, & Sadek, 2010) which included studies of predictive factors of bullying, reported that victims of bullying were more likely to have negative cognitions about themselves (Nansel et al., 2001), compared to those were not bullied. Moreover, research found that criticize or reassurance themselves stimulate the same neurophysiological systems as criticism or

reassurance that we receive by others (Petrocchi, Ottaviani, & Couyoumdjan, 2016). These findings suggested the strong association between negative self-evaluation, bullying, and negative phycological outcomes.

Regarding the research on homophobic bullying, it may also increase internalized sexual stigma (ISS) among sexual minority people (Baiocco, D'Alessio, & Laghi, 2010). ISS may be defined as the product of society's negative ideology about LGBT+ people that some sexual minorities internalize; it involves individual hostility, dislike, negative feelings and attitudes of LGBT+ people (Lingiardi, Baiocco, & Nardelli, 2012). A review on this topic (Szymanski, Kashubeck-West, & Meyer, 2008), showed that homophobic bullying had a direct and indirect impact on self-esteem through ISS. Studies that have assessed the impact of bullying on ISS among LGBT+ adolescents, found that LGBT+ youth who were bullied on account of their sexual orientation also reported higher levels of ISS (Blais, Gervais, & Hébert, 2014; Collier, van Beusekom, Bos, & Sandfort, 2013; Feinstein, Goldfried, & Davila, 2012), in addition to difficulties in accepting one's sexual orientation and possibly increased negative self-evaluation in the form of self-hatred or self-inadequacy (Szymanski & Ikizler, 2013).

According to theory of hegemonic masculinity (Connell, 1990), studies argued that sports are a cultural idealization of masculinity and represent a belief system that stigmatizes non-heterosexual forms of behavior, identity, relationship, or community (Eng, 2008; Griffin, 1993, 1998; Herek & Garnets, 2007; Meyer, 2003; Salvati, Pistella, & Baiocco, 2018a; Salvati, Pistella, Ioverno, Giacomantonio, & Baiocco, 2018c). Likewise, this line of reasoning is one also frequently reported by non-academic work. For instance, an international research into homophobia in sport, called 'Out on the Fields" (Denison & Kitchen, 2015), highlighted that of 9,494 participants, from 6 predominantly English-speaking countries, the 62% of all respondents believed homophobia is more common in

team sports than in other parts of society, and the majority of them (73%) did not believe that sports were a safe place for LGBT+ participants. However, several limitations were found in this study. For example, the study permitted people to retrospectively account for their experiences in sport and conflated the experiences of heterosexuals, bisexuals and trans-gendered people with gay and lesbian individuals (see Anderson et al., 2016). Moreover, another recent survey (Stonewall, 2016) in a sample of 1,249 sports fans across UK, reported that 72% of football fans observed homophobic behaviors in sports-related contexts and that homophobia remained a problem in sport across all levels, while a British governmental inquiry (DCMS, 2017) found that homonegativity was a widespread problem in football.

To the contrary, utilizing Anderson's inclusive masculinity theory, several recent studies highlight a progressive decrease in cultural homophobia in different countries, such as in U.S. (Anderson, 2009a, 2009b, 2011a, 2011b; Anderson & Kian, 2012; Anderson et al., 2016), Australia (McCann, Minichiello, & Plummer, 2009), and most notably in UK (Cleland, Magrath, & Kian, 2016; McCormack, 2012). These findings suggested that sexual prejudice is playing less of a role in the experiences of LGBT+ people in sport (Bush et al., 2012). In addition, Anderson argues that as the level of homophobia declines, the mandates of the hegemonic form of masculinity hold less cultural influence (Anderson & Kian, 2012).

Thus, although some qualitative (Mishna, Newman, Daley, & Solomon, 2008; Shannon, 2013) and quantitative research (Evans et al., 2016; Symons et al., 2010; Peguero, 2008; Volk & Lagzdins, 2009) found a progressive decline of homonegativity in several western countries (Anderson, 2009a, 2011a; Anderson, et al., 2016; Bush et al., 2012; Cleland et al., 2016; Melton & Cunningham, 2014; Zipp, 2011), to our knowledge, this topic has not yet been explored in Italy (see chapter 1 for more detail on this topic).

Moreover, few previous studies (Brackenridge et al., 2007; Evans et al., 2016; Peguero, 2008; Rivers, 2001; Symons et al., 2010) have examined differences between sexual minorities and heterosexuals in frequencies of bullying in sports environments. Thus, the *study 4* (see 3.1 section, p. 71) addressed this gap by exploring such differences in sport participants (as compared with non-sport participants).

Victimization and unhealthy weight-control behaviors

Beside the effects of bullying of mental health and well-being, studies have recognized that peer victimization (such as dating violence, cyberbullying or school bullying) might also be a risk factor for unhealthy weight control behaviors (UWCB; e.g. fasting, vomiting, or diet pills use), especially for LGBT+ students (Ackard & Neumark-Sztainer, 2002). Generally, the literature on UWCB underlined that LGBT+ adolescents report higher prevalence of UWCB compared to heterosexual counterparts (Watson, Adjei, Saewyc, Homma, & Goodenow, 2017), especially sexual minority males (French, Story, Remafedi, Resnick, & Blum, 1996). A recent work (Calzo, Austin, & Micali, 2018) argued that such disparities in UWCB may be due to exposure to sexual minority stressors (i.e. stress related to prejudice, social stigma, and peer victimization).

Indeed, given that peer victimization is a primary form of minority stress experienced by sexual minority adolescents (LeVasseur et al., 2013; Toomey & Russell, 2016) and also is a significant risk factor for UWCB (Ackard et al., 2002), studies suggested that peer victimization experiences may be more common among sexual minority adolescents who report UWCB (Calzo et al., 2018). However, to our knowledge, only one study (Thapa & Kelvin, 2017) has examined the interaction between gender, sexual identity and peer victimization in predicting UWCB.

The Thapa and Kelvin's study (2017), in a representative sample of 11,887 students in the state of New York, found a three-way interaction between gender, sexual identity

and some forms of peer victimization (dating violence and cyberbullying), but no interaction effect between gender, sexual identity, and bullying at school on UWCB. In particular, the association between UWCB and dating violence was stronger among sexual minority males and heterosexual males, while its relationship with cyberbullying was higher among sexual minority females and heterosexual males. The authors explained these contrasting results by suggesting that different forms of peer victimization may interact in different ways with gender and sexual identity in predicting UWCB.

However, the aforementioned study (Thapa & Kelvin, 2017) did not consider other individual and relational characteristics in youth which may be associated with UWCB. Specifically, studies showed that physical activity (Hausenblas & Fallon, 2006), older age (Calzo et al., 2018), body weight (Van Geel, Vedder, & Tanilon, 2014), and social support (Vander Wal, 2012) are important predictors of UWCB.

In addition, although previous studies have found gender and sexual identity differences in UWCB (French et al., 1996; Watson et al., 2017), and that individual and relational variables (including peer victimization) are associated with the higher prevalence of disordered eating in youth (Calzo et al., 2018; Hausenblas & Fallon, 2006; Van Geel et al., 2014; Vander Wal, 2012), the interplay of these factors has not been examined in the same study and in a representative sample of population of sexual minorities and heterosexual adolescents. Thus, the *study 5* (see 3.2 section, p. 88) addressed this gap by exploring the interactive role of gender, sexual identity, and peer victimization in a representative sample of Texas students.

1.3 Are LGBT+ students at risk for unhealthy weight-related behaviors?

Disparities between sexual minorities and heterosexuals

Adverse weight-related behaviors, such as unhealthy food habits and physical inactivity, are a serious public health problem in developing countries (Allison, Adlaf, Dwyer, Lysy, & Irving, 2007; Cooper et al., 2000; Pilkington, Powell, & Davis, 2016). An increasing number of studies (Haines & Neumark-Sztainer, 2006; Nelson, Neumark-Stzainer, Hannan, Sirard, & Story, 2006; Suisman et al. 2014) highlight the importance of understanding the development of such behaviors during adolescence in order to reduce their potentially adverse effects on psychosocial development, growth, and physical health outcomes. LGBT+ youth may be particularly at risk for unhealthy weight-related behaviors due to additional stressors and challenges related to sexual and gender identity development (Miller & Luk, 2018; Watson et al., 2017).

Disparities in weight-related behaviors for LGBT+ people are now well-documented (Brittain & Dinger, 2017; Cohen & Cribbs, 2017; Gorczynski & Brittain, 2016; Miller & Luk, 2018). Most of studies reported that LGBT+ people are less likely to engage in healthy behaviors, such as physical activity (Calzo et al., 2013; Mereish & Poteat, 2015; Shankle, 2013) or healthy eating habits (Cohen & Cribbs, 2017; Rainey, Furman, & Gearhardt, 2018) and more likely to report disordered eating than their non-LGBT+ counterparts (Jones, Haycraft, Murjan, & Arcelus, 2016).

Such studies contribute to an understanding and examining disparities in weight-related behaviors based on sexual and gender identity. Yet, the research to date has tended to focus on LGBT+ as a single combined group, limiting the information about the distinctive experiences of transgender youth independent of sexual identity. To our knowledge, there is a dearth of research reporting on weight-related health behaviors among transgender people. This lack of research is especially concerning given evidence

that transgender youth may have greater consciousness regarding their bodies compared to cisgender youth, including experiencing dissatisfaction with their bodies (Jones et al., 2016; McGuire, Doty, Catalpa, & Ola, 2016; Witcomb et al., 2015). Furthermore, negative school experiences and feeling unsafe are common among transgender students (McGuire, Anderson, Toomey, & Russell, 2010), and may be risk factors for unhealthy weight-related behaviors (Halvarsson-Edlund, Sjödén, & Lunner, 2008; Libbey, Story, Neumark-Sztainer, & Boutelle, 2008).

In the following sections we review the small body of existing literature on weight-related health behaviors among transgender people. We also include an overview of the research on the school experiences of transgender youth in an effort to understand potential risk factors for disparities in weight-related behaviors based on gender identity. We then provide results from our multilevel study on the effects of negative school experiences on different indicators of weight-related health behaviors, focusing on the experiences of transgender students.

Weight-related health behaviors among transgender people

A number of previous studies have investigated the weight-related health behaviors among transgender people. Such studies have investigated potential disparities for transgender people on health-related behaviors such as physical activity and dietary intake. Research in this field suggested that physical activity at school (i.e., physical education) as well as outside of school (Gorczynski & Brittain, 2016; Nelson et al., 2006; Zapata, Bryant, McDermott, & Hefelfinger, 2008) are important variables to take account to predict weight-related health behaviors (Gorczynski & Brittain, 2016; Nelson et al., 2006; Zapata, Bryant, McDermott, & Hefelfinger, 2008).

Moreover, lower levels of physical activity at school as well as outside of school are associated with increased risk for adverse health outcomes, such as coronary heart

disease and cancer, and poor mental health among students (Cooper et al., 2000; Nelson et al., 2008). Despite the crucial health implications, little research has specifically investigated disparities in physical activity based on gender identity (Jones, Arcelus, Bouman, & Haycraft, 2017). A recent systematic review of the literature (Herrick & Duncan, 2017) reported that only one study (VanKim et al., 2014) showed that transgender college students (n = 53) engaged in less strenuous forms of physical activity and muscle strengthening exercise than their non-transgender counterparts. As suggested by another recent review of the literature based on transgender adults (Jones et al., 2017), Muchicko and colleagues (Muchicko, Lepp, & Barkley, 2014) study found that transgender adults (n = 33) reported significantly less physical activity compared to non-transgender participants.

Another indicator of weight-related behaviors regards dietary intake. Several studies demonstrated the positive role of healthy eating habits on the well-being and mental health of youth (Haines & Neumark-Sztainer, 2006; Robinson-O'Brien, Larson, Neumark-Sztainer, Hannan, & Story, 2009), and that poor dietary quality across childhood and adolescence is associated with obesity, disordered eating, and diet- related chronic diseases in adulthood (Banfield, Liu, Davis, Chang, & Frazier-Wood, 2016; Brown & Roberts, 2012), including diabetes, and cardiovascular disease. However, to our knowledge, only one study has specifically investigated this among transgender people (VanKim et al., 2014). In this study, no significant differences were observed between transgender and non-transgender college students for healthy and unhealthy food consumption.

Moreover, existing literature on these issues was based only on transgender adult participants (Conron, Scott, Stowell, & Landers, 2012; Fredriksen-Goldsen et al., 2013; Muchicko et al., 2014), on small sample of transgender students (VanKim et al., 2014), or

clinical-based samples (Bandini et al., 2013; Holt, Skagerberg, & Dunsford, 2016; Vocks, Stahn, Loenser, & Legenbauer, 2009), thereby limiting the generalizability of the results. To our knowledge, there are no existing studies based on data from non-clinical, population-based samples of transgender people.

The Experience of Transgender Students

Transgender students are less likely to feel safe at school compared to non-transgender students. For example, the GLSEN 2015 National School Climate Survey (Kosciw et al., 2016) reported that of 1,384 transgender students from United States and the District of Columbia, nearly half (43.3%) felt unsafe at school because of their gender identity or gender expression. Likewise, Toomey and colleagues (Toomey, McGuire, & Russell, 2012) found that over 60% of the students in their study (n = 1,415) perceived their schools as a safe place for gender non-conforming youth. However, in the same study, the rates of harassment at school reported by transgender students (n = 25) were higher than 65%, showing a discrepancy between perceived and actual experience of safety. To the contrary, Sausa (2005), reported that in a group of 24 transgender students from Philadelphia (ages ranged from 16-21), 75% of them did not feel safe in school.

Several studies identified the school context as a key setting for public health strategies to improve healthy behaviors among pre-adolescents and adolescents, such as programs to support healthy eating and physical activity (Haines & Neumark-Sztainer, 2006; Levine & Smolak, 2005; Story, Nanney, & Schwartz, 2009), and to help students acquire important lifelong skills for healthy eating and active living. Despite the relevant role of school environments to promote healthy nutrition, physical activity behaviors and well-being in youth, studies have recognized that school contexts may be sites for pervasive victimization and harassment experienced by sexual and gender minorities (Coulter, Bersamin, Russell, & Mair, 2017; Grossman et al., 2009). This is especially true

for transgender students, who tend to experience high level of prejudice, discrimination and social exclusion due to their gender non-conforming status (Kosciw et al., 2016; Toomey et al., 2010, 2012). For example, McGuire and colleagues (2010) reported that of 59 transgender students in the state of California, nearly 80% experienced verbal harassment at school, including negative comments because their gender identity, with notable increases in psychological distress and reduced feelings of safety.

Consequently, transgender people are at risk of developing mental health problems (Scandurra, Amodeo, Valerio, Bochicchio, & Frost, 2017) and experiencing chronic social stress due to negative attitudes and behaviors based on transphobia (Nagoshi et al., 2008). According to some studies (Scandurra et al., 2017) that applied the minority stress model (Meyer, 2003) to transgender population, external objective events, such as discrimination and threats to the person's safety, the expectation of being discriminated, with corresponding feelings of unsafety, and the internalized transphobia, which is referred to the internalization of negative societal attitudes toward transgenderism and toward themselves as transgender individual, are associated with negative effects on physical and psychological health not only in LGBT+ people (D'Augelli et al., 1998; Herek & Garnets 2007; Lingiardi et al., 2012) but also in transgender persons (Scandurra et al., 2017, 2018).

As argued by some authors, students who fear for their safety at school or who reported being harassed, regardless of gender identity, may suffer from a lower quality of life and emotional adjustment problems (Farrow & Fox, 2011; Hawker & Boulton, 2000; Lunde, Frisén, & Hwang, 2006), such as anxiety, depression, loneliness, body dissatisfaction, and low self-esteem. Existing research found a strong association between such emotional symptoms caused by feeling unsafe or harassment and eating disorders or consumption of unhealthy eating (Halvarsson-Edlund et al., 2008; Libbey et al., 2008), while other studies found a direct association between harassment, unhealthy eating habits

and the high prevalence of weight-related problems (Libbey et al., 2008; Lunde, Frisén, & Hwang, 2006).

Additionally, students who did not feel safe at school may be less likely to engage in physical activity (Kosciw et al., 2016) compared to those who felt safe. The GLSEN study also found that students who felt unsafe or uncomfortable at school reported most frequently avoiding locker rooms, gym/physical education at school, and the rates of such avoidance behaviors were higher in transgender students compared to all other participants (Kosciw et al., 2016). This is in line with other research on harassment in sports-related contexts (Baiocco et al., 2018b; Brackenridge et al., 2007), which reported that many LGBT+ people leave or avoid sports because of harassment and the fear and risk of being assaulted again.

Although the school climate may have a distinctive role in weight-related health behaviors, especially in transgender students, other variables should be considered by taking into account the previous literature on these topics. Lower socioeconomic status and rural residency (Lutfiyya, Lipsky, Wisdom-Behounek, & Inpanbutr-Martinkus, 2007; Moore et al., 2010; Patterson, Moore, Probst, & Shinogle,et al., 2004; Warren, Smalley, & Barefoot, 2016), being female (McArthur, & Raedeke, 2009), older age (Gyurcsik, Bray, & Brittain, 2004; Holt et al., 2016), belonging to a sexual (Gorczynski & Brittain, 2016; Shankle, 2013) or ethnic minority (Crespo, Smit, Andersen, Carter-Pokras, & Ainsworth, 2000; McArthur, & Raedeke, 2009) have been identified as possible barriers to the physical activity or physical education, and might contribute to increase overweight or obesity risk in youth. Also, school characteristics such as school size have been linked with physical activity outside of school and other healthy activities. For example, Mehta, Cornell, Fan, and Gregory (2013) showed that in smaller schools there are more opportunities to engage in competitive team sports compared to larger schools.

To our knowledge, no previous studies have focused specifically on weight-related health behaviors and conditions among transgender students, and no research has considered the role of school safety weight-related health behaviors. Thus, the *study 6* (see 4.1 section, p. 107) addressed this gap by exploring the relationship between perception of school safety, gender identity, and weight-related health behaviors (such as participation in physical education at school and physical activities outside of school, healthy and unhealthy eating habits) in a representative sample of non-transgender and transgender American students.

Chapter 2. “Don’t ask, don’t tell” attitude

2.1 Study 1. Sexual Prejudice in Sport Scale (SPSS)

The paper summarizing the *first* and *second study* was published in:

Baiocco R., Pistella, J., Salvati, M., Ioverno, S., & Lucidi, F. (2018c). Sexual prejudice in sport scale: A new measure. *Journal of Homosexuality*. Advance online publication. doi:10.1080/00918369.2018.1547560

The *first study* extends the existing instruments of negative attitudes by examining the multidimensionality of sexual prejudice toward lesbian and gay people in sports-related contexts. Previously, several studies tried to offer a scale of sexual prejudice in sports (chapter 1, pp. 9–10), mainly through measures designed to assess general sexual prejudice (Anderson & Mowatt, 2013; Ensign et al., 2011; Forbes et al., 2002; Gill et al., 2006; O’Brien et al., 2013; Oswalt & Vargas 2013; Roper & Halloran, 2007; Sartore & Cunningham, 2009), using single question (Drummond et al., 2015; Gill et al., Shang & Gill, 2012), or adapting instruments developed for other purposes (Shang et al., 2012). Thus, the foremost limitations of these research regarded the lack of consideration of both specific and multidimensional aspects of sexual prejudice in sports-related contexts. Moreover, most of these studies referred to physical activity in school and did not consider sexual prejudice in lesbian and gay athletes.

The *current study* did not include negative attitudes toward bisexual or transgender people, because several studies reported that they experience a kind of discrimination that

is significantly different from lesbians and gay men, and that transphobia, biphobia, and homophobia are different phenomena (Herek, 2002; Worthen, 2013).

Hence, the main purpose of this research was to develop and validate a measurement scale that aims to capture attitudes in heterosexual Italian athletes as well as in lesbian and gay Italian athletes toward lesbian and gay people in sports-related contexts. Indeed, it may be a useful measure for evaluating the Anderson's results about the decline of homophobia in Italian sport-related contexts (Baiocco et al., 2018b). In addition, we hypothesized that men (Gill et al., 2006; Herek, 1988; Shang & Gill, 2012) in team sports (Anderson, 2010; Griffin, 1998) would show more negative attitudes toward sexual minority athletes and coaches than would men in individual sports or all women athletes. The third and final aim was to verify the construct validity of the new scale and its dimensions.

Preliminary Stages and Construct Definition

The first step taken to begin constructing the measurement scale was to define the construct and develop potential items for the new measure. This *study* was initially inspired by a previous study by Griffin (1992) which identified six manifestations of sexual prejudice in sport. These themes were: Silence, denial, apology, promotion of a heterosexual image, attack, and gender preferences. Based on these themes and a review of literature related to homophobia and heterosexism in sport discussed previously, a qualitative method was used to guide the design and development of the instrument. In particular, 15 experts and researchers in sport psychology, 8 graduate students with experience studying sexual prejudices, 14 sexual minority athletes, and 6 coaches participated in a series of focus groups and interviews. The sexual minority respondents were recruited from lesbian, gay, and bisexual sport organizations in Rome, Italy.

Chapter 2. "Don't ask, don't tell" attitude

A total of 65 items were generated for the initial pool by consensus of experts on the basis of review of literature and qualitative approach. The items were intended to reflect the following areas identified by Griffin (1992): (a) attack, (b) silence/denial, (c) promotion of a heterosexual image, and (d) gender preferences. The items were assessed for readability and discussed by a new expert group (n = 8), including psychotherapists (specialists in psychological counseling of lesbian and gay patients). The experts rated how each item was understandable to each educational level and how it was representative of our construct, using a 7 point-Likert scale ranging from 1 (*poor comprehension/not at all representative*) to 7 (*excellent comprehension/very representative*). Fifteen items were removed to eliminate redundancy after consultations with the same expert group (n = 8), and 12 additional items with an average rating below 4 were excluded, leaving a pool of 38 items. Final revisions were made to the item to improve clarity and parsimony. The content validity of the items was confirmed by further six sport psychology professionals and two researchers in clinical and developmental psychology and experienced in scale development.

Thus, the remaining items were classified into one of the themes derived from the model advanced by Griffin (1992): (a) attack on lesbian and gay people in sport, (b) silence/denial, and (c) gender stereotypes. All authors gave final approval of the version.

The attack dimension represents a specific form of sexual prejudice that can be inferred from actions such avoiding and rejecting lesbian and gay athletes in a sports setting and/or perpetrating acts of discrimination or violence, even through nonverbal behavior, in the presence of athletes who were identified or perceived as sexual minorities (an example item is "those who support lesbian and gay athletes should be isolated"). This dimension will be called *open-rejection*.

The silence/denial dimension represents a propensity to deny the presence of sexual minorities and to have a negative attitude toward the coming-out of lesbian and gay people in their own sport (an example item is "I believe lesbian and gay athletes/coaches should not openly declare their sexual orientation, even if they want to"). This dimension will be called *denial of visibility*.

The gender stereotypes dimension corresponds to the tendency to attribute a special innate set of sporting skills and performance based on gender and sexual orientation stereotypes (an example item is "gay men are less competitive than heterosexual men"). This dimension will be called *gendering performance*.

Finally, the instrument composed of 38 items was pilot-tested with a sample of 40 female athletes and 40 male athletes (with ages ranging from 22 to 35) who participated competitively in the sports of rugby (n = 30), soccer (n = 20), and volleyball (n = 30). A 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) was used in the pilot testing as well as in all successive data collections. After completing a series of interviews with 20 female athletes and 20 male athletes of the pilot study, who were then asked to review the proposed items for clarity, relevance, and redundancy, we removed nine items because 15% of the athletes (3 females and 3 males) identified them as vague or redundant, leaving 29 items for analysis purposes.

2.1.1 Method

Procedures and Participants

Participants were recruited from different sports clubs throughout Italy. Both individual (n = 55) and team (n = 70) coaches were initially contacted by the authors. After receiving permission from the coaches (20 individual coaches vs. 32 team coaches), questionnaires were administered to athletes 25 minutes before or after they engaged in their regular training program. The response rate for coaches was 41.6%. We explained to

participants that the purpose of the research was to examine the relationship between sports involvement and demographic characteristics in Italian athletes. The illustration was voluntarily generic, because we did not want participants to know the current study objectives.

Inclusion criteria were (a) Italian nationality, (b) identification as heterosexual, and (c) participation in sports at least once a week. According to these criteria, 31 participants were not included in the analyses: 10 were not Italian, 15 were Italian but were not heterosexuals, and 6 participants were excluded because they did not complete the entire set of questionnaires. Athletes were assured of anonymity and were given the option to not participate in the project. Respondents answered individually to the same questionnaire packet and were asked to respond to the sociodemographic questions and the new scale. Written informed consent was obtained from all study participants. They took about 15 to 20 minutes to complete it. A total of 95% of distributed questionnaires were completely filled in. The protocol was approved by the Ethics Commission of the Department of Developmental and Social Psychology of the Sapienza University of Rome.

The sample comprised of 297 Italian athletes (24% were from Southern Italy, 66% were from Central Italy; and 10% were from Northern Italy), 150 of whom were women (50.5%) and 147 of whom were men (49.5%), with ages ranging from 15 to 45 (women: M_{age} = 27.07, SD = 7.01; men: M_{age} = 28.35, SD = 7.14). There were no significant differences between the groups of women and men (t[295] = 1.55, p = .123) with respect to age. The general level of education was average, with 48.3% of women (n = 71), and 31.9% of men (n = 48) having at least a university degree, while 41.5% of women (n = 61), and 56% of men (n = 84) had completed secondary school.

Athletes participated in a variety of nine different sporting disciplines: soccer, n = 52 (17.5%); boxing, n = 31 (10.4%); volleyball, n = 40 (13.5%); weight lifting, n = 55

(18.5%); swimming, *n* = 26 (8.8%); rugby, *n* = 14 (4.7%); gymnastics, *n* = 49 (16.5%); basketball, *n* = 13 (4.4%); and dance, *n* = 17 (5.7%). The athletes had trained in their sport for a mean of 8.78 years (SD = 7.61) and played at the amateur competitive level (*n* = 166 [56%]), at the sub-elite level (*n* = 99 [33%]), and the elite level (*n* = 32 [11%]). Each athlete was categorized as belonging either to team sports (e.g., soccer or basketball, *n* = 141; 47.5%) or to individual sports (e.g., gymnastics or swimming; *n* = 156; 52.5%). The wide variety of sports, ages, and competitive levels was targeted to increase the heterogeneity of the sample. No significant differences were found for years of sport experience between men and women (*t*[295] = 1.92, *p* = .060).

Measures

Identifying Information. Participants completed an identifying form to collect data related to sociodemographic characteristics such as gender, age, education, and sexual orientation. Participants were asked to report their sexual orientation by answering a single item (1 = heterosexual, 2 = lesbian, 3 = gay, and 4 = other). Respondents were required to provide information regarding sports participation, their competitive levels, and their current sport status.

Sexual Prejudice in Sport Scale (SPSS). The 29-item SPSS was administered to all of the participants. The SPSS was used to measure the negative attitudes and prejudice toward lesbian/gay people in sports-related contexts. Each item is associated with a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), whereby a higher score indicated greater negative attitudes. The preliminary stages of this study suggested that attitudes toward lesbian/gay athletes and coaches were conceptualized as consisting of three types of attitudes: (a) open-rejection, (b) denial of visibility, and (c) gendering performance. The factor structure and reliability of the scale were investigated via exploratory factor analyses, the results of which are presented in this dissertation.

2.1.2 Data Analysis

We used the Statistical Package for the Social Sciences (version 24.0) to conduct the analyses. A principal axis factor analysis with an oblimin rotation was performed in order to identify potential factors for SPSS scale; oblimin rotation was applied to allow for correlation between factors. Bender (1989) indicated that a sample size of five individuals per scale item is adequate to establish a representative factor analysis. Our ratio of 297 subjects to 29 items was sufficient. The internal consistency was measured by Cronbach's α. A coefficient alpha of .70 is generally considered to be adequate (Nunnally & Bernstein, 1994). Group differences on the levels of SPSS subscales were analyzed using multivariate analysis of covariance (MANCOVA).

2.1.3 Results

Exploratory Factor Analysis

Exploratory factor analysis (EFA) was conducted on the 29 items, using principal-axis factor analysis. After examining the scree plot (Cattell, 1966) at the rotated eigenvalues and the parallel analysis (Horn, 1965), a three-factor solution emerged that explained 49.50% of variance. Items that did not have loadings of at least .40 on any scale or with a communality of less than .30 were removed from the data set. Next, we eliminated items loading on multiple factors, defined as higher than .30 on a second factor (Henson & Roberts, 2006;). According these selection methods, three items with communalities lower than .30 were deleted, and six additional items were removed because they had factor loadings of less than .40.

The analysis was replicated on the remaining 19 items; the three factors now retained accounted for 62.73% of the variance. We found that first factor was positively correlated with the second ($r = .37$, $p < .01$) and third factor ($r = .46$, $p < .01$). Moreover, the second factor was positively related to third factor ($r = .33$, $p < .01$). Eigenvalues

ranged from 2.02 to 7.82. The first factor contained seven items and accounted for 39.12% of the variance, reflecting blatant and open prejudice expressed directly toward lesbian/gay people in sports-related contexts. We labelled this factor *open-rejection* (OR). There were five items on the second factor, which accounted for 8.68% of the variance. The items on the second factor reflected attitudes about rejection and categorical denial concerning the existence of sexual minorities in their own sport-related contexts. This factor represents a subtler form of prejudice. We named this factor *denial of visibility* (DV). The third factor contained seven items (accounting for 8.14% of the variance) that addressed beliefs that bad sport performance is linked to being gay, while lesbian women are seen as masculine and most suitable for competitive sports. We labelled this factor *gendering performance* (GP). Cronbach's alphas were .92, .78, and .86 for the three factors, respectively, while for the total score was .89. Factor loadings and reliability statistics are shown in Table 1.

Table 1. Exploratory factor analysis (EFA) of the SPSS subscales

	Direct Oblimin Rotation Rotated Factor Loadings					
	Factor 1	Factor 2	Factor 3	*M* (SD)	h^2	*Correlation Item-Total*
18. LG athletes should be treated negatively because of their sexual orientation	**.91**	–.01	–.30	1.22 (.78)	.85	86**
16. LG athletes who reveal their sexual orientation should be expelled from sports clubs	**.89**	–.03	.01	1.20 (.72)	.77.	81**
12. LG athletes should be treated as second-class people	**.88**	.01	–.03	1.21 (.71)	.81	83**
7. I believe that the presence of LG athletes may adversely affect the image of the sports clubs	**.72**	.16	–.01	1.33 (1.02)	.64	79**
4. Those who support LG athletes should be isolated	**.71**	–.38	–.01	1.20 (.82)	.49.	66**
2. LG persons should not be allowed to be trainers	**.68**	.02	–.02	1.33 (1.04)	.48	69**
9. I'd feel uncomfortable to engage in sports with a gay man/a lesbian woman	**.66**	.15	.14	1.43 (1.11)	.65	77**
19. [In my sports clubs] there may be LG athletes, but I don't need to know who they are	–.07	**.91**	.09	2.16 (1.85)	.75	.70**
6. Sexual orientation of LG athletes is a private matter that should not be discussed.	–.09	**.63**	–.01	3.21 (2.25)	.37	.53**
14. LG athletes understood that it is better to conceal their sexual orientation	.14	**.61**	–.01	2.23 (1.68)	.46	.57**
1. I believe LG athletes/coaches should not openly declare their sexual orientation, even if they want to	.09	**.56**	–.01	2.12 (1.65)	.35	.52**
10. I'd feel uncomfortable if LG athletes talked about their sexual orientation openly	.07	**.49**	–.23	2.33 (1.82)	.43	.52**
5. Gay men are less likely to become leaders than heterosexual men	–.03	.07	**–.74**	1.79 (1.46)	.58	.69**
3. Lesbian women are more likely to become leaders than heterosexual women	–.23	–.01	**–.71**	1.85 (1.36)	.40	.52**
11. Lesbian women are less suitable for those sports, such as skating, that are more suited to girls	.17	–.05	**–.64**	1.36 (.92)	.51	.66**
15. Lesbian women are more skilled in sports than heterosexual women	.09	.01	**–.63**	1.58 (1.21)	.46	.63**
8. Gay men are less competitive than heterosexual men	.22	.01	**–.62**	1.60 (1.24)	.58	.69**
17. Gay men could not be strong in a combat sport	.17	.10	**–.59**	1.56 (1.20)	.53	.66**
13. Gay men are not as good as heterosexual men at sports	.25	.01	**–.57**	1.43 (1.08)	.53	.65**
Eigenvalue	7.82	2.07	2.02			
% explained variance	39.12	8.68	8.14			
Cronbach's alpha	.92	.78	.86			

Note. Factor 1=open-rejection (OR); Factor 2 = denial of visibility (DV); Factor 3=gendering performance (GP); h^2 =item communalities at extraction. LG=lesbian/gay people

Gender and Type of Sport Differences in SPSS Subscales

We conducted a 2 (gender: woman vs. man) *x* 2 (type of sport: team vs. individual) MANCOVA on OR, DV, and GP scores. Age and years of sport experience were used as covariates. The analysis revealed a significant effect for gender, type of sport, and years of sport experience (gender: Wilks' Lambda = .88; $F[3,289] = 12.88$; $p < .01$, $\eta_p^2 = .11$; type of sport: Wilks' Lambda = .96; $F[3,289] = 3.69$; $p < .012$, $\eta_p^2 = .04$; years of sport experience: Wilks' Lambda = .95; $F[3,289] = 4.23$; $p < .006$, $\eta_p^2 = .04$), but no significant effect of age and gender *x* type of sport (age: Wilks' Lambda = .98; $F[3,289] = 1.91$; $p = .128$, $\eta_p^2 = .01$; interaction effect: Wilks' Lambda = .98; $F[3,289] = 2.38$; $p = .07$, $\eta_p^2 = .02$). The effect of gender was significant for the three dimensions (OR: $F[1, 291] = 12.98$, $p < .001$, $\eta_p^2 = .043$; DV: $F[1, 291] = 22.37$, $p < .001$, $\eta_p^2 = .071$; GP: $F[1, 291] = 28.77$, $p < .001$, $\eta_p^2 = .090$). Men showed more negative attitudes toward lesbian and gay athletes and coaches compared to women in all three dimensions. Type of sport was significantly associated with the DV, $F(1, 291) = 6.09$, $p = .014$, $\eta_p^2 = .026$, but not associated with the OR, $F(1, 291) = 1.13$, $p = .29$, $\eta_p^2 < .01$, and GP, $F(1, 291) = .12$, $p = .725$, $\eta_p^2 < .01$, subscales. Therefore, participants who are engaged in team sports reported more negative attitudes toward the coming-out of lesbian and gay people in sports-related contexts than did those who engaged in individual sports.

Similar results were found for years of sports experience, which were associated negatively with DV scores, $F(1, 291) = 11.52$, $p < .001$, $\eta_p^2 = .039$, but were not significantly associated with the OR, $F(1, 291) = .08$, $p = .773$, $\eta_p^2 < .001$, and GP scores, $F(1, 291) = .73$, $p = .392$, $\eta_p^2 = .003$. In general, athletes who had accumulated more years of experience in their sport reported more negative attitudes in the DV dimension compared to their counterparts. Mean and standard deviations are shown in Table 2. These results showed significant main effects but no significant interaction effect. Thus, men,

regardless of type of sport, reported higher levels of OR, DV, and GP than did women; likewise, participants who engaged in team sports, regardless of the gender, reported higher levels of DV than those who engaged in individual sports.

Table 2. Means and standard deviations for OR, DV, and GP subscales by gender and type of sport

	OR		DV		GP	
	M	SD	*M*	SD	*M*	SD
Gender*						
Women (*n* =147)	1.11	.40	2.04	1.23	1.33	.70
Men (*n* =150)	1.42	.94	2.77	1.40	1.85	1.01
Type of sport**						
Team (*n* = 141)	1.36	.85	2.45	1.42	1.55	.83
Individual (*n* = 156)	1.20	.62	2.36	1.31	1.65	.98

Note. OR: open-rejection; DV: denial of visibility; GP: gendering performance.
* Significant main effect of gender on OR, DV and GP. ** Significant main effect of type of sport only on DV subscale

2.2 Study 2. Factor Structure Reliability of the SPSS

The main purpose of *study 2* was to test the factor structure, internal reliability and validity of the 19-item SPSS. The procedures were identical to those described in *study 1* (p. 36). We recruited only heterosexual athletes for Group 1 and lesbian/gay athletes for Group 2. The Appendix presents the scale items (p. 165).

2.2.1 Method

Participants

Group 1. Of the 97 coaches contacted, 40 did not respond, 15 declined participation, and 42 agreed to allow their athletes to participate after being informed of the purpose and conditions of the *study*. The response rate for coaches was 43.3%. Twenty-one cases in the dataset were eliminated on the basis of inclusion criteria described in *study 1* (p. 35): 4

participants were not Italian, 9 were Italian but were not heterosexuals, and 8 were not included because they did not complete the questionnaire. The athlete participants included 138 women (44.4%) and 173 men (55.6%) with ages ranging from 17 to 41 (women: M_{age} = 27.62, SD = 6.73; men: M_{age} = 28.65, SD = 6.17). There were no significant differences between the groups of women and men (t[309] = 1.72, p = .163) with respect to age. Of the 311 participants who completed the survey at Time 1, 127 (56.7% men and 43.3% women) also completed the questionnaire at Time 2, six weeks later (40.8% response rate). All athletes self-identified as exclusively heterosexuals. As regards the geographical distribution of the participants' residence, about 23% of them lived in Southern Italy, 69% in Central Italy; and 8% in Northern Italy. The general level of education was average, with 45.6% of women (n = 63) and 38.1% of men (n = 66) having at least a university degree, while 42% of women (n = 58) and 52.6% of men (n = 91) had completed secondary school.

Participants competed in 11 different sports, including acrobatics (n = 12, 3.9%), soccer (n = 47, 15.1%), boxing (n = 19, 6.1%), volleyball (n = 39, 12.5%), weight lifting (n = 43, 13.8%), swimming (n = 29, 9.3%); rugby (n = 18, 5.8%), gymnastics (n = 51, 16.4%), skiing (n = 25, 8%), basketball (n = 12, 3.9%), and dance (n = 16, 5.1%). They trained in their sport for a mean of 9.03 years (SD=8.11) and were playing at the amateur competitive level (n = 162 [52.1%]), the sub-elite level (n = 116 [37.3%]), and elite level (n = 33 [10.6%]). No significant differences were found for years of sport experience between men and women (t[309] = 1.89, p = .060). The participants belonging to Group 1 were asked to respond to the sociodemographic questions, the SPSS, the Attitudes Toward Lesbians and Gay Men (ATLG), and the Satisfaction with Life Scale (SWLS).

Group 2. Twenty lesbian and gay sport organizations in Italy were initially contacted and asked for permission to contact their-athletes. Nine of the twenty sport organizations

provided approval to contact the coaching staff (*n* = 57). Twenty-two of the 57 coaches provided the researchers with access to their athletes. The response rate for coaches was 38.6%. The athlete participants included 101 lesbian women (63.1%), and 59 gay men (36.9%) with ages ranging from 15 to 45 (lesbian women: M_{age} = 27.53, SD = 5.56; gay men: M_{age} = 29.42, SD = 7.67). There were no significant differences between groups of lesbian women and gay men (t[158] = 1.79, p = .074) with respect to age. All athletes self-identified as exclusively homosexuals (32.5% of the participants were from Southern Italy, 59.4% from Central Italy, and 8.1% from Northern Italy). The general level of education was average, with 49.5% of lesbian women (*n* = 50), and 55.9% of gay men (*n* = 33) having at least a university degree; while 43.6% of lesbian women (*n* = 58), and 37.3% of gay men (*n* = 22) had completed secondary school.

Participants played a number of different sports, including acrobatics (*n* = 5, 3.1%), soccer (*n* = 37, 23.1%), boxing (*n* = 9, 5.6%), volleyball (*n* = 16, 10.0%), weight lifting (*n* = 23, 14.4%), swimming (*n* = 23, 14.4%); rugby (*n* = 7, 4.4%), gymnastics (*n* = 12, 7.5%), skiing (*n* = 12, 7.5%), basketball (*n* = 3, 1.9%), and dance (*n* = 13, 8.1%). Athletes were involved in their sport for a mean of 6.24 years (SD = 5.84) and were playing at the amateur competitive level (*n* = 89 [55.6%]), at the sub-elite level (*n* = 45 [28.1%]), and the elite level (*n* = 26 [16.3%]). No significant differences were found for years of sport experience between lesbian women and gay men (t[158] = -.975, p = .331). The participants belonging to Group 2 were asked to respond to the sociodemographic questions, the SPSS, the Measure of the Internalized Sexual Stigma for Lesbians and Gay Men (MISS-LG), and the Satisfaction with Life Scale (SWLS).

Measures

Identifying Information. Sociodemographic characteristics were explored using the same questions described in *study 1* (p. 36).

Sexual Prejudice in Sport Scale. The final version of the instrument with 19 items developed in *study 1* was used (see the Measure section of *study 1* for further information on the scale). Information on reliability is presented in this thesis.

Attitudes Toward Lesbians and Gay Men. The Attitudes Toward Lesbians and Gay Men scale (ATLG; Herek, 1988) is a ten-item questionnaire designed to capture negative attitudes toward lesbian and gay people, consisting of two subscales: five items addressing attitudes toward lesbian women (ATL) and five items targeting attitudes toward gay men (ATG). Each item is rated on a five-point scale, where the participants must indicate their degree of agreement from 1 (*strongly disagree*) to 5 (*strongly agree*). A higher score indicated greater sexual prejudice. The scale for gay men includes items such as "I think male homosexuals are disgusting" and "male homosexuality is a perversion". In the version for lesbians, examples of items are "sex between two women is just plain wrong" and "female homosexuality is a natural expression of sexuality between women.". Reliability analyses showed a good level of internal consistency: Total ATLG ($\alpha = .89$), ATL ($\alpha = .75$), and ATG ($\alpha = .86$). The ATLG was used to assess the convergent validity of the SPSS only in Group 1.

Measure of the Internalized Sexual Stigma for Lesbians and Gay Men (MISS-LG). The scale (Lingiardi et al., 2012) is a six-item questionnaire (e.g., "I would prefer to be heterosexual" or "at university and/or at work, I pretend to be heterosexual") designed to evaluate negative attitudes that lesbians and gay men have toward homosexuality in general and toward such aspects of themselves. A total score derived from the five-point Likert-type scale ranged from 1 (*I agree*) to 5 (*I disagree*), whereby a higher score indicated greater ISS. In the present *study*, the Cronbach's α was .86. The MISS-LG was used to assess the convergent validity of the SPSS only in Group 2.

Satisfaction with Life Scale (SWLS). The scale (Diener, Emmons, Larsen, & Griffin, 1985) is composed of five items which measure the individual's evaluation of satisfaction with life in general (e.g., ''I am satisfied with my life''). The questions have a seven-point Likert-type scale, ranging from 1 (*totally disagree*) to 7 (*totally agree*). The total score of each participant was calculated as the sum of the five items, with higher values corresponding to a higher degree of life satisfaction. In this *study*, the Cronbach's α values was .90. The SWLS was used to assess the divergent validity of the SPSS.

2.2.2 Data Analysis

The data were analyzed with Statistical Package for the Social Sciences 24.0 and LISREL 8.8 version. A confirmatory factor analysis (CFA) was performed to determine whether the measured variables reliably reflect the latent variables. An a priori alternative one-factor model was also tested. Moreover, to avoid problems of non-convergence, we used item parceling based on item skewness to reduce the number of observed variables per latent factor. The use of item parcels is quite common in the literature (Little, Cunningham, Shahar, & Widaman, 2002). This procedure resulted in three observed scores for OR factor, two for DV factor, and three for GP factor.

As has been reported in the literature (Bollen, 1989), the chi square statistic tends to be sensitive to sample size, implying that it is almost always significant despite reasonable fit to the data. Therefore, goodness of fit was evaluated using the following alternative indexes and cut-off criteria: Standardized chi-square (χ^2/df; Kline, 2011) < 3, standardized root mean residual (SRMR; Hu & Bentler, 1999) < .06, root mean square of approximation (RMSEA; Byrne, 2001) < .08, comparative fit index (CFI), and the non-normed fit index (NNFI; Tabachnick & Fidell, 1996) > .95. Multiple indices were used, because they provide a more conservative and reliable evaluation of the solution. Internal consistency of

the SPSS was measured by the Cronbach's *alpha* coefficient, while *Pearson's* correlation was performed to assess the convergent and divergent validity of the instrument.

2.2.3 Results

Confirmatory Factor Analysis and Internal Consistency

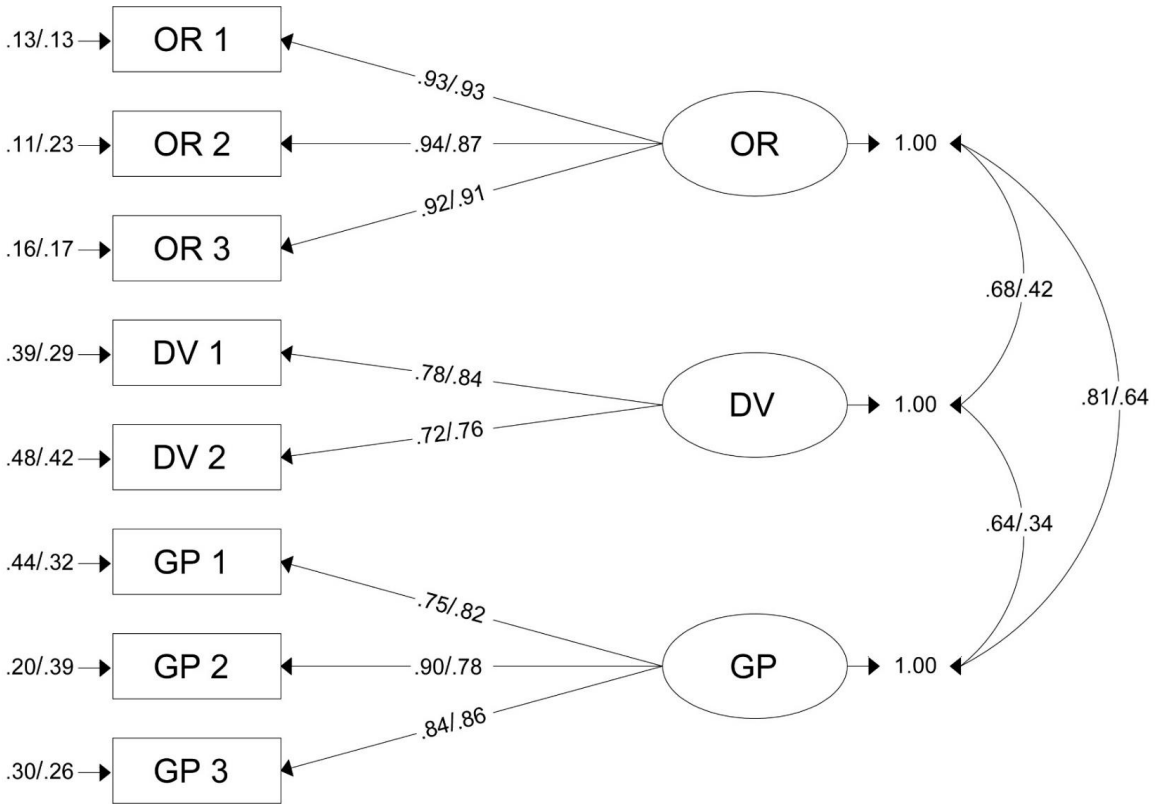
We conducted CFA to confirm the three-factor structure of the scale. The goodness-of-fit indicators for the model are presented in Table 3. We hypothesized the three-factor model to prove a better fit than an alternative one-factor model. Indeed, the three-factor model, shown in Figure 2, presented a reasonably high goodness of fit for the heterosexual group (Group 1: $\chi^2[17] = 32.74$, $p = .012$; $\chi^2/df = 1.93$; *SRMR* = .02; *RMSEA* = .05 [90% CI: .02; .08]; *CFI* = .99; *NNFI* = .99) as well as for the sexual minority group (Group 2: $\chi^2[17] = 25.78$, $p = .078$; $\chi^2/df = 1.51$; *SRMR* = .03; *RMSEA* = .05 [90% CI: .01; 10]; *CFI* = .99; *NNFI* = .99), while the one-factor model did not produce an acceptable fit to the data (Group 1: $\chi^2[20] = 249.95$, $p < .001$; $\chi^2/df = 12.49$; *SRMR* = .08; *RMSEA* = .19 [90% CI: .17; .21]; *CFI* = .93; *NNFI* = .90; Group 2: $\chi^2[20] = 228.63$, $p < .001$; $\chi^2/df = 11.43$; *SRMR* = .14; *RMSEA* = .25 [90% CI: .23; .29]; *CFI* = .80; *NNFI* = .72). These findings suggest that the three-factor oblique model provides the best fit to the data.

Table 3. Goodness-of-fit indicators for the single factor and three-factor models

	χ^2	χ^2/df	*SRMR*	*RMSEA*	*CFI*	*NNFI*
Group 1 (*n* =311)						
Single factor model	$\chi^2(20) = 249.95$, $p<.001$	12.49	.08	.19 (90% CI: .17; .21)	.93	.90
Three-factor model	$\chi^2(17) = 32.74$, $p=.012$	1.93	.02	.05 (90% CI: .02; .08)	.99	.99
Group 2 (*n* =160)						
Single factor model	$\chi^2(20) = 228.63$, $p<.001$	11.43	.14	.25 (90% CI: .23; .29)	.80	.72
Three-factor model	$\chi^2(17) = 25.78$, $p=.078$	1.51	.03	.05 (90% CI: .01; .10)	.99	.99

Note. *SRMR* = Standardized Root Mean Square Residual; *RMSEA* = Root Mean Square Error of Approximation; 90% CI = *RMSEA* 90% Confidence Interval; *CFI* = Comparative Fit Index; *NNFI* = Non-Normed Fit Index

Figure 2. Confirmatory Factor Analysis for the SPSS



Note. OR: open-rejection; DV: denial of visibility; GP: gendering performance. Values reported first refer to heterosexual athletes of the Group 1 (n = 311), values reported second refer to lesbian/gay participants of the Group 2 (n = 160)

The scale reliability estimates were quite strong and comparable to those obtained in *Study 1*. The mean scores on each subscale and their internal consistency are shown in Table 4. Using data from Group 1, the composite reliability was .93 for the OR subscale, .71 for the DV subscale, .87 for the GP subscale, and .92 for the total score (in Group 2, the reliability was .90, .77, .83, and .87, respectively).

Table 4. Subscale mean and internal consistency estimates of the SPSS for Group 1 and Group 2

	Group 1 (n = 311)		Group 2 (n = 160)	
Subscale (Number of items)	*M* (SD)	Cronbach's α	*M* (SD)	Cronbach's α
OR (7)	1.38 (.97)	.93	1.12 (.54)	.90
DV (5)	2.41 (1.28)	.71	1.78 (1.06)	.77
GP (7)	1.62 (.97)	.87	1.50 (.85)	.83
SPSS Total score (19)	1.80 (.92)	.92	1.46 (.63)	.87

Note. OR: open-rejection; DV: denial of visibility; GP: gendering performance

These findings indicate that the SPSS displays good internal consistency. The SPSS was administrated for a second time at a seven-week interval (Group 1: $n = 127$). The test–retest reliability coefficients for the total score, OR, DV, and GP subscales were .92, .91, .71, and .88, respectively. This result shows that the SPSS demonstrated adequate temporal stability.

Convergent and Divergent Validity

Item-total correlations were computed, and the results ranged from .56 to .87 (Group 1) and from .45 to .84 (Group 2). Subscale intercorrelations for the SPSS are presented in Table 5. In Group 1, the strongest association was between OR and GP dimensions ($r = .72$, $p < .001$); while the correlations between DV and GP ($r = .49$) and between DV and OR ($r = .56$, $p < .001$) were medium. Using data from Group 2, similar results were found, indicating a low to moderate relationship among subscales. These findings support the interrelated nature of the subscales.

Pearson correlations coefficients were computed to examine the convergent and divergent validity between the three dimensions of the SPSS, general sexual prejudice (ATLG in Group 1 and MISS-LG in the Group 2), and SWLS. As shown in Table 5, all three dimensions of the SPSS displayed a strong association with homophobic attitudes toward gay men (ATG) and lesbian women (ATL) in Group 1 and with internalized sexual stigma (MISS-LG) in Group 2. As expected, the factors of OR, DV, and GP were not significantly correlated with score of SWLS in both groups (Group 1 and Group 2). Thus, the subscales demonstrated adequate discriminant and convergent validity.

Table 5. Correlations among SPSS subscales, general sexual prejudice (ATL and ATG) and Satisfaction with Life (SWLS)

	OR	DV	GP	ATL^	ATG^	MISS-LG~	SWLS
OR	1	.362**	.557**	/	/	.252**	.024
DV	.567**	1	.265**	/	/	.189*	–.014
GP	.742**	.497**	1	/	/	.232**	–.003
ATL^	.511**	.395**	.394**	1	/	/	/
ATG^	.553**	.423**	.443**	.860**	1	/	/
MISS-LG~	/	/	/	/	/	1	–.350**
SWLS	.063	.020	–.046	.133*	.145*	/	1

Note. ** p<.01, * p<05. Correlations below the diagonal are based on Group 1 data; correlations above the diagonal are based on Group 2 data.
OR: open-rejection; DV: denial of visibility; GP: gendering performance
^ATL and ATG (Attitudes Toward Lesbians and Gay Men) refers only to heterosexual participants of the Group 1 (n = 311)
~MISS-LG (Measure of the Internalized Sexual Stigma for Lesbians and Gay Men) refers only to lesbians and gay men participants of the Group 2 (n = 160)

2.3 Study 3. SPSS in a group of Italian sexual minorities

The paper summarizing the *third study* was submitted in:

Pistella, J., Rosati, F., Ioverno, S., Laghi, F., Lucidi, F., Baiocco, R. (*Submitted*). Coming-out in Family and Sports-related Contexts: The mediation effect of "don't ask, don't tell" attitude. *International Journal of Sexual Health.*

As we reported in the introduction section (chapter 1, pp. 13–16), a few studies investigated the coming-out process in sport setting and no empirical research examined the role of internalized sexual stigma in one's decision to reveal their non-heterosexual orientation to others. Once again, to our knowledge, no study investigated the relationship between coming-out to family members (COF) and in sports-related contexts (COS), and the possible mediating role of the internalization of prejudices toward the choice to reveal a non-heterosexual orientation in sports environments.

In this *study*, we used the new measure developed (SPSS, see *studies 1* and *2* for more detail), which has been validated to distinguish between different kind of attitudes, such as traditional forms of prejudice (open rejection) and more subtle forms, such as denial toward COS of sexual minorities (denial of visibility) and gender-stereotypic attributions related to sporting skills (gendering performance). In addition, contrary to previous measures of sexual prejudice in sport (Drummond et al., 2015; Gill et al., 2010; Gill et al., 2006; O'Brien et al., 2013; Oswalt & Vargas 2013; Sartore & Cunningham, 2009; Shang & Gill, 2012), the SPSS was specifically created to assess the presence of both specific and multidimensional aspects of sexual prejudice toward sexual minorities in sports-related contexts also among sexual minority population. In particular, this instrument describes and measures the multidimensional aspects of internalized sexual

prejudice in sport contexts and their role in the choice of sexual minority athletes to reveal a non-heterosexual orientation in sports environments, emphasizing the determinant role of denial of visibility dimensions.

Given that previous literature did not show differences in lesbian and gay people's choice to reveal their sexual orientation to friends, family, siblings, or to work colleagues (Balsam & Mohr, 2007; Dewaele et al., 2014; Salvati et al., 2018d), we hypothesize that: (Hypothesis 1) there will be no differences between gay and lesbian athletes in the levels of COF and COS. Moreover, in line with the literature that reported higher levels of negative attitudes both toward homosexuality in general and toward themselves in gay men compared to lesbian women (Bahamondes-Correa, 2016; Herek, 2007), we expected that (Hypothesis 2) gay athletes will report higher levels of internalized sexual prejudice toward sexual minorities in sports than lesbian participants. Finally, assuming that the interiorization of negative feelings and attitudes toward the visibility and the choice to reveal a non-heterosexual orientation in sports-related contexts could have an effect on COF and COS both in gay and lesbian athletes, we hypothesize that (Hypothesis 3) the relationship between COF and COS (Griffith & Hebls, 2002) will be mediated by negative attitudes toward the coming-out and visibility of lesbian and gay athletes in all participants, regardless of their gender.

2.3.1 Method

Procedures and Participants

The data was collected through online questionnaires, advertisements posted on websites and social networks and handing out the online link directing the participants to the survey (hosted by SurveyMonkey). Participants were recruited from community recreational centers, and sport clubs throughout Italy. We explained to participants that the purpose of the *study* was to investigate the association between general attitudes in sexual

minorities and sports involvement. The explanation was generic because we did not want participants to know the study's objectives. Informed consent was obtained from each participant after the explanation of the study (15 – 20 minutes to complete), and no compensation was provided.

Inclusion criteria were (a) Italian nationality; (b) self-identified as lesbian or gay men; (c) age over 18 years; (d) participation in sports at least once a week. According to these criteria, 17 participants were excluded in the analyses: 6 were not Italian, 7 were Italian but not lesbian or gay, and 4 participants were not included because they did not reach 18 years old at the time of our study. All potential participants could access the survey only if they had signed an indication that they met inclusion criteria described previously. Participation in the study was voluntary and anonymous, and they answered individually to the same questionnaire packet. A total of 92% of distributed questionnaires were completely filled in. The protocol was approved by the Ethics Commission of the Department of Developmental and Social Psychology of the Sapienza University of Rome.

The participant sample consisted of 176 Italian participants, 113 of whom self-identified as lesbian women (64%), and 63 gay men (36%). Participants' ages ranged from 18 to 35 (lesbian women: M_{age} = 27.04, SD = 4.95 gay men: M_{age} = 27.87, SD = 5.74). There were no significant differences between the groups of lesbians and gay men, $t(174) = 1.02$, $p = .31$, with respect to age. Athletes participated in a variety of six different sporting disciplines: soccer, n = 43 (24%); martial arts, n = 13 (8%); volleyball, n = 35 (20%); swimming, n = 25 (14%); gymnastics, n = 51 (29%); and dance, n = 9 (5%). Each athlete was categorized as belonging either to individual sports (e.g., swimming; n = 93; 53%) or to team sports (e.g., soccer, n = 83; 47%). Descriptive statistics of the measure differentiated by gender are shown in Table 6.

Table 6. Descriptive (means, standard deviations, percentages) of the sample's characteristics

	Lesbians (n = 113)	Gay men (n = 63)	Total sample (n = 176)	$t/F/\chi^2$	*p*
1. Age	27.04 (4.95)	27.87 (5.74)	27.34 (5.20)	1.02	.31
2. SES	2.18 (.77)	2.24 (.69)	2.20 (.74)	.27	.60
3. Education level	3.76 (1.10)	3.90 (1.17)	3.81 (1.13)	.66	.42
4. Political orientation	2.19 (.92)	2.41 (.78)	2.27 (.88)	2.51	.12
5. Type of sport, *n* (%)	60 (53%)	23 (36%)	83 (47%)	4.47	.03
6. Years of sport participation	9.13 (4.89)	10.90 (6.92)	9.77 (5.74)	3.91	.05
7. DV	1.99 (.92)	2.27 (1.15)	2.09 (1.02)	3.15	.07
8. OR	1.57 (.88)	1.71 (.96)	1.62 (.91)	1.03	.31
9. GP	1.70 (.77)	1.89 (1.00)	1.77 (.86)	1.92	.17
10. COF	.46 (.37)	.42 (.36)	.44 (.37)	.45	.50
11. COS	.42 (.45)	.32 (.44)	.38 (.44)	1.69	.19

Note. *$p < .05$, ** $p < .01$. The $t/F/\chi^2$ it refers to the gender difference in total sample (lesbian and gay men). Standard deviations and percentages are in parentheses. SES: socioeconomic statuses (1 = very poor to 5 = very good); education level (1= primary school to 6 = PhD, specialization); political orientation (1 = completely left to 5 = completely right); OR: open-rejection; DV: denial of visibility rejection and; GP: gendering performance rejection (1 = strongly disagree to 7 = strongly agree); COF: coming-out to family members (0 = I did not tell to anybody to 1 = I did tell to all family members); COS: coming-out in sport (0 = I did not tell to anybody to 1 = I did tell to all members of my sport-related context); type of sport (team = 2, individual = 1), the percentages refer to the number of participants who practice team sports

Measures

Identifying Information. Participants completed an identifying form to collect data about demographic characteristics such as age, socioeconomic statuses (SES; a 6-point Likert-type scale ranged from 1 = very poor to 5 = very good), education level (1 = primary school, 6 = PhD, specialization), and political orientation (1 = completely left, 5 = completely right). Participants were asked to report their sexual orientation by answering an item with three alternative responses (1 = lesbian, 2 = gay, 3 = other). In the case of the "other" alternative, participants were allowed to specify their sexual orientation. Respondents were required to provide information regarding years of sports participation, and type of sport (1 = individual sport, 2 = team sport).

***Sexual Prejudice in Sport Scale* (SPSS).** The final version of the instrument with 19 items was used (see the *Study 1* and *Study 2* for further information on the scale).

Disclosure of Sexual Orientation. Participants were asked to indicate whether each member of their family (mother, father, brother, sister, and other family members) and of their sports-related context (coach, other athletes of the same team/club or sport association, and the majority of the individuals who were associated their sports-related context) were aware of their sexual orientation (0 = no, 1 = yes, 2 = not applicable). The two scales of coming-out, that is COF and COS, were assessed separately.

The total score of COF and COS derived from mean score of the family members and of the individuals belonging to their sports-related context who were aware of the respondent's sexual orientation, respectively. When we created the total index of COF, we have taking into account of the number of family members, for example the mean score was computed only on 2 items if participant lost one parent and he or she was an only child. All participants responded to the questions on COS. This scale was used in previous research (Pistella et al., 2016), where a score of 0 showed that no individuals were

aware of participant's sexual orientation, while a score of 1 indicated that all family members or all individuals of sports-related context were aware of their sexual orientation. In this study, the Cronbach's alpha values were .88 (COF) and .90 (COS).

2.3.2 Data Analysis

The Statistical Package for the Social Sciences (SPSS 25.0) was used to conduct the analyses. Gender differences on the levels of COF, COS and SPSS were examined using univariate analysis of variance (ANOVA). Paired-sample *t*-tests were conducted to determine whether there were significant differences between participants in their mean levels of COF and COS. Bivariate correlations were performed to examine the associations among COF, COS, SPSS, and the identifying information. The internal consistency was measured by using Cronbach's α.

Moreover, using the Process SPSS macro (Hayes, 2013), we examined different mediation models to test the relationship between COF and COS and to understand the impact of negative attitudes toward coming-out of lesbian/gay athletes in this association. We evaluated the direct and mediating effects for statistical significance with bias-corrected bootstrapping (5,000 samples) and 95% confidence interval (CI). All continuous variables were standardized to z-scores prior to analysis.

2.3.3 Results

Associations between Key Variables of the Present Study

The participants from the total sample reported, $M = .44$, SD = .37, in the scale of COF, and $M = .38$, SD = .44, in the scale of COS. A paired-sample *t*-tests did not reveal, on average, significant differences between COF and COS, $t(175) = 1.68$, $p = .09$, Cohen's $d = .15$. Additionally, Table 6 showed no significant differences among lesbian/gay athletes in the levels of COF, COS, or SPSS subscales.

Bivariate correlations were performed to examine the association between the key variables of the study (Table 7). We found that COS and COF were negatively related to DV, OR and GP indicators, while only SPSS subscales were positively associated with conservative political orientation. Moreover, the results showed a moderate intercorrelation among SPSS subscales and among COF and COS.

Table 7. Correlations between coming-out (toward family members and in sport), sexual prejudice in sport scale and other variables considered in the study

	1	2	3	4	5	6	7	8	9	10	11
1. Age	1.00										
2. SES	–.13	1.00									
3. Education level	.37**	–.03	1.00								
4. Political orientation	–.08	.05	–.23**	1.00							
5. Type of sport	–.18*	.02	–.13**	.02	1.00						
6. Years of sports participation	.23**	.11	.05	.14	–.09	1.00					
7. DV	–.09	–.02	.10	.16*	–.15*	.08	1.00				
8. OR	.10	–.14	.14	.18*	–.23**	.07	.43**	1.00			
9. GP	.06	–.08	.10	.16*	–.18*	.19*	.48**	.66**	1.00		
10. COF	.12	.10	.08	–.12	.03	.09	–.34**	–.21**	–.30**	1.00	
11. COS	.12	–.07	.03	–.03	.26**	–.11	–.58**	–.41**	–.47**	.31**	1.00

Note. ** p<.01, * p<05. SES: socioeconomic statuses; (1 = very poor to 5 = very good); education level (1= primary school to 6 = PhD, specialization); political orientation (1 = completely left to 5 = completely right); type of sport (team = 2, individual = 1); OR: open-rejection; DV: denial of visibility; GP: gendering performance; COF: coming-out to family members; COS: coming-out in sport

Attitudes Toward lesbian/gay athletes and COS

To examine the relationship between COF and COS and to investigated whether such association was mediated by DV subscale, that is a "don't ask, don't tell" attitude toward the coming-out of lesbian and gay athletes (Hypothesis 3), we performed various mediation models. First, we tested mediation analysis using COF as dependent variable and COS as independent variable. Since that the mediating variable (DV) was not associated to the COF in this model, we repeated the analyses using COF as predictor of COS in mediation model.

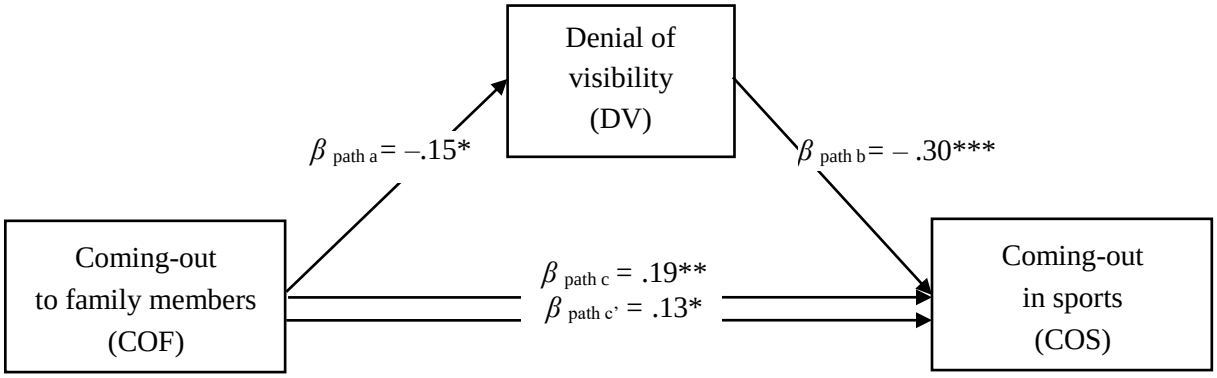
Thus, we conducted a mediation analysis to examine whether the relationship between COF and COS was mediated by DV subscale. We included covariates to adjust for age, gender, socioeconomic statuses, education level, political orientation, type of sport (individual *vs.* team sport), years of sports participation, OR and GP subscales.

The results of the mediation model showed that COF and DV subscale accounted for a significant amount of variance in COS, $F(11, 164) = 9.91$, $p < .001$, $R^2 = .40$. When examining the relationship of COF on COS (Figure 3), we found a significant direct effect, $\beta = .19$, SE = 0.07, $p < .01$. However, such direct effect was reduced when the DV indicator were entered into the model, $\beta = .13$, SE = 0.06, $p = .04$, while there was a significant indirect effect (bootstrapping estimate = .05, SE = .02, 95% CI = .01, .10). The individual paths revealed that COF was negatively related to DV subscale, $\beta = -.15$, SE = .06, $p = .02$, and DV indicator was negatively related to COS, $\beta = -.30$, SE = .08, $p < .001$.

With regard to covariates inserted, only political orientation, $\beta = -.17$, SE = .07, $p = .03$, type of sport, $\beta = .31$, SE = .13, $p = .01$, and GP subscale, $\beta = -.18$, SE = .09, $p = .04$, were associated with COS, while age, $\beta = .13$, SE = .07, $p = .07$, gender, $\beta = .03$, SE = .13, $p = .80$, SES, $\beta = -.13$, SE = .08, $p = .10$, education level, $\beta = .19$, SE = .13, $p = .13$, years

of sports participation, β = –.02, SE = .02, p = .13, and OR subscale, β = –.12, SE = .09, p = .15, were unrelated to COS.

Figure 3. The mediated effect of denial of visibility on the relationship between coming-out to family members and coming-out in sports-related context (n = 176).



Note. * p < .05. ** p < .01, *** p < .001. All values are beta coefficients. In the DV subscale a higher score indicated greater negative attitudes toward the visibility of lesbian and gay athletes in sports. A higher score to the COF and COS indicated more likely to have revealed their sexual orientation to family members and in the sports-related context, respectively. Age, SES, education level, political orientation, type of sport, years of sports participation, OR and GP subscales were included as covariates

2.4 General Discussion

The present research described the process of development, validation and use of the SPSS, a multidimensional measure of sexual prejudice toward lesbian and gay athletes and coaches in sports-related contexts. Recently, qualitative and quantitative studies about sexual prejudice in sport settings have increased (Bush et al., 2012; Cunningham & Melton, 2012; Mullin, 2013; Piedra, 2016; Piedra et al., 2017; Ripley et al., 2012), and the need to use appropriate instruments to assess the change process in the level of homophobia in sports-related contexts has become acutely evident. This is especially true in the Italian context, where no previous studies have investigated the level of sexual

prejudice in sport settings through quantitative research (Scandurra et al., 2017). In fact, several studies demonstrated that Italy is a country in which sexual minorities constantly face the influence of societal heterosexism and homophobic climates (Lingiardi et al., 2016; Pistella, Tanzilli, Ioverno, Lingiardi, & Baiocco, 2018).

Generally, existing research has mostly focused on hostility or inclusivity toward lesbians and gay men within sports (Morrow & Gill 2003; Piedra et al., 2017), has adapted instruments devised for other purposes (Shang et al., 2012), has used single items (Drummond et al., 2015; Gill et al., 2010; Shang, & Gill, 2012), or has assessed the sexual prejudice in sports-related contexts without distinguishing it from general sexual prejudice (Anderson & Mowatt, 2013; Ensign et al., 2011; Forbes et al., 2002; Gill et al., 2006; O'Brien et al., 2013; Oswalt & Vargas 2013; Roper & Halloran, 2007; Sartore & Cunningham, 2009). For this reason, the SPSS scale was specifically designed to explore specific sexual prejudice toward lesbian and gay athletes and to distinguish certain kinds of attitudes within sports, such as negative attitudes toward coming-out in sports-related contexts or stereotypes about lesbian and gay athletes' performance.

Results of the exploratory factor analyses of the SPSS (*study 1*) revealed that the scale is composed of three identifiable factors: (a) open-rejection, (b) denial of visibility, and (c) gendering performance. The reduced factor structure to three dimensions from the original set of six themes described by Griffin (1992) seems to provide a more parsimonious representation of the negative attitudes toward lesbian and gay athletes and coaches. These dimensions reflect traditional forms of prejudice (i.e., a belief that sexual minorities should be treated negatively because of their sexual orientation and should be expelled from sports clubs) and more subtle manifestations regarding disclosure of sexual orientation other than heterosexual (i.e., a belief that sexual orientation is a private matter that should not be discussed) or concerning some stereotypes about the performance of

lesbian and gay people (i.e., a belief that gay men are less competitive than heterosexual men or that lesbian women are less suitable for those sports more suited to girls).

An additional aim of the *first study* was to verify if men in team sports showed higher levels of sexual prejudice in sport than did men in individual teams and women athletes. The findings partially confirmed our second hypothesis (*study 1*). The interaction effect between gender and type of sport was not significant, while there was a main effect of gender on OR, DV, and GP subscales. In particular, we found out that men showed higher levels of SPSS than women; this result is in line with scientific literature about negative attitudes toward sexual minorities (Gill et al., 2006; Herek, 1988; Shang & Gill, 2012). Moreover, this result is not surprising in our country, where homophobic attitudes and behaviors are still rife (Lingiardi et al., 2016). In addition, the main effect of the type of sports on the DV subscale suggests that in Italian team sports, "don't ask, don't tell" attitude plays a dominant role (Anderson, 2014; Griffin, 1998; Hekma, 1994).

Similar results may be observed regarding the years of sports experience on the DV subscale. Thus, regardless the participants' age, more years of experience in their own sport caused a higher "don't ask, don't tell" attitude toward the coming-out of lesbian and gay athletes or coaches. An interesting explanation for our result could be that athletes who had been involved in the sport for more years tend to have higher athletic identity, which a recent research discovered was associated with negative attitudes toward lesbian and gay people, especially among male participants (O'Brien et al., 2013). DV seems be more sensitive to reflect the negative attitudes toward lesbian/gay people than the OR and GP subscales, as was noted also in *study 2*. In fact, in both heterosexual and lesbian/gay athletes in the *second study*, the mean scores for the SPSS subscales (Table 4) indicated that the participants reported more negative views about the coming-out of lesbian/gay

people in their own sport (DV subscale), but moderately low levels of open-rejection were expressed directly toward lesbian/gay people in sports-related contexts (OR subscale).

The results from CFA (*study 2*) revealed that a three-factor solution was the best fit for the data in comparison with a one-factor model, both in heterosexual (Group 1 of the *second study*) and lesbian/gay (Group 2 of the *second study*) participants. Reliability of the SPSS was supported by internal consistency analyses of scale and subscales (in both the *first* and the *second studies*), and test-retest reliability in one heterosexual subsample of the *study 2* (n = 127), who were retested 49 days after initial test. Correlations with other scales of sexual prejudice (ATLG in heterosexual people and MISS-LG in sexual minorities) and satisfaction with life in general (SWLS) demonstrated SPSS convergent and divergent validity, respectively. However, the moderate correlations between SPSS subscales and ATLG (Table 5) demonstrated that they are two different expressions of sexual prejudice and have no overlap between them.

Finally, an element of originality of this research has been to take into account the perspective of lesbian and gay athletes. Interestingly, recent studies have indeed showed that even people belonging to sexual minorities have negative attitudes and hostile feelings both toward homosexuality in other persons and toward themselves as non-heterosexual people (Baiocco et al., 2018b; Herek, Gillis, & Cogan, 2009; Herek, 2007; Lingiardi et al., 2012). This set of negative attitudes could be present also in sports-related contexts, which have been conceptualized by some studies as a belief system that privileges heterosexuality and stigmatizes other sexual behaviors (Anderson, 2011a, 2011b; Cavalier, 2011; Eng, 2008; Hekma, 1998; Meyer, 2003), and consequently, lesbian and gay people could internalize this cultural belief system through which homosexuality in sports is denigrated or discredited. In fact, some research has suggested that the atmosphere for lesbian and gay people in sport is hostile and that lesbian and gay people still perceive it as an environment

that is not accepting of sexual minorities (Cavalier, 2011; Griffin, 1998), while more recent contributions have reported that sexual prejudice is declining and is playing less of a role in the experiences of lesbian and gay people in sport (Adams et al., 2010; Anderson, 2002, 2009; Anderson & McGuire, 2010; McCormack, 2011). However, this change should be investigated through a common instrument both in heterosexual and lesbian and gay individuals.

For these reason, we conducted a further study using the SPSS in a sample of lesbian and gay athletes (*study 3*). This research aims to extend knowledge about coming-out processes of lesbian/gay athletes in Italian sports-related contexts. We wanted to verify possible differences between lesbian and gay athletes based on gender in the levels of COF, COS and internalized sexual prejudice, which is represented by DV dimension. We also wanted to verify the relationship between COF and COS, identifying possible factors involved in mediation effects, under the assumption of a primary effect modification of DV after controlling for age, SES, education level, political orientation, type of sport, OR and GP. The DV dimension refers to a propensity to deny the presence of lesbian and gay people in their own sports-related contexts and a negative attitude toward COS, that is strictly related to heterosexism and homophobia.

Our choice to use only the DV dimension in the mediation analysis is related to its specific characteristics. Compared to the OR dimension, this subscale measures a subtler form of sexual prejudice that it can be considered as typical of western-modern societies (Pettigrew & Meertens, 1995). As a hidden form of prejudice is more difficult to identify and deconstruct when internalized by lesbian and gay people and could reflect a modern form of prejudice in line with a decreasing of explicit homophobia in sports-related contexts (Anderson, 2010; Bush et al, 2012; McCormack, 2011). Moreover, compared to GP dimension – that could represent in the same way a subtler form of sexual prejudice –

the DV is more appropriate to identify characteristics of *don't ask don't tell* attitude (Anderson, 2014; Forbes et al., 2002; Hekma, 1994) and consequently more accurate for our research intent.

Our findings confirmed our first hypothesis (*study 3*): participants in our study did not show significant gender differences in the levels of COS and COF, in line with previous research (Balsam & Mohr, 2007; Dewaele et al., 2014; Salvati et al., 2018d). Moreover, no significant differences were found between COF and COS, confirming the tendency of lesbian and gay people to reveal their sexual orientation in all their different life contexts (Griffith & Hebls, 2002), including the own sport environment.

An unexpected finding concerns the absence of differences among lesbian and gay athletes in SPSS subscales. We expected higher levels of sexual prejudice in gay athletes compared to lesbians (*study 3*, Hypothesis 2), as shown in several previous studies related to other social contexts (Bahamondes-Correa, 2016; Herek, 2007). A possible explanation for our result could be related to the specific sports context, in which predominates a homophobic climate and an ideal of hegemonic masculinity that is perceived as dangerous and/or uncomfortable equally for lesbians and gay men (Connell, 1990; Drummond et al., 2015; Eng, 2008).

Lesbian and gay athletes could internalize the same negative attitudes from their own sport environment, showing a specificity of sexual prejudice in sports-related contexts assessed by the SPSS subscales. Therefore, both lesbians and gay athletes could consider bad sport performance as linked to being gay, because of an automatic association with feminine features, and consider lesbians as more suitable for competitive and arduous sports because of the association with masculine features. Finally, in the same way they could consider sexual orientation as a private affair and exposure given by COS as dangerous for their athletic career (Griffin, 1992; Krane & Barber, 2005).

Associations between key variables revealed a positive correlation between COF and COS, showing that lesbian and gay people that choose to disclose their sexual orientation with family members are also more likely to disclose within their sport environment, and vice versa. Prior experiences of disclosures may increase familiarity with the coming-out process, social support and decrease the fear of being rejected. Therefore, lesbian and gay people more open about their sexual orientation within family choose more easily to reveal their sexual identity also in other contexts and more likely develop an affirming approach toward own' lesbian and gay identity (Griffith & Hebls, 2002). Self-acceptance and a positive lesbian and gay identity are related to coming-out (Cass, 1979) and represent protective factors against stress related to concealment (Riggle, Mohr, Rostosky, Fingerhut & Balsam, 2014). Moreover, COS and COF were negatively related to all SPSS subscales, confirming that lesbian and gay people with higher levels of sexual prejudice are less likely to disclose their sexual orientation in several contexts.

In contrast with previous research (Newman & Muzzonigro, 1993; Schope, 2002), conservative political orientation was not related to COF or COS, while was positively associated with all SPSS dimensions (Lingiardi et al., 2016; Pistella et al., 2016). It can be assumed that social progressive improvements related to sexual minorities in Italy are also involving families with more traditional values, allowing lesbian and gay offspring to be more open about their sexual identity. On the other side, sexual prejudice (represented by OR, DV and GP subscales), given its characteristics of rejection toward sexual minorities, remain more easily and consistently linked with a conservative political orientation (Herek, 2002)

Finally, we conducted a mediation analysis to examine if the relationship between COF and COS would be mediated by DV subscale, including in the model several covariates to control their effects. Regarding the covariates included in the mediation

model, significant associations emerged between COS and political orientation, type of sport and GP subscale. Once again (same as in the correlation analysis discussed previously), political orientation resulted associated with COS, highlighting the influence of conservative values on levels of self-disclosure. Regarding the type of sport, participants showed more difficulties to come out in team sports compared to individual sports, in line with previous studies that found higher levels of sexual prejudices and rejection to COS (Roper & Halloran, 2007) in team sports athletes compared to the individual one. This result suggests that in Italian team sports is still pervasive a *don't ask don't tell* attitude, and lesbian and gay athletes could be less likely to share their sexual identity with their teammates, for fear of not adhere to typical goliardic standards of sports teams and being excluded by the group.

Another interesting finding was that DV and GP subscales resulted associated with COS, while OR subscale not. A possible explanation could be related to the specificity of subscales that we used, because GP and DV dimensions represent a subtler form of sexual prejudice and may be more common, while OR subscale is a blatant form of negative attitude, with lower social acceptability. Since may be more easily for lesbian and gay people to internalize subtle forms of negative attitudes toward themselves rather than openly hostile attitudes, our results showed that both subtle sexual prejudice's subscales were significant associated with the COS in our participants. Thus, these results are not surprising if interpreted in the light of current literature about modern forms of prejudice (Griffin, 1992; Morrison & Morrison, 2011; Pettigrew & Meertens, 1995; Whitley & Kite, 2010). In addition, our results are in line with the original study (Baiocco et al., 2018b), that found higher levels of DV subscale compared to the levels of GP and OR.

The key finding of the mediation analysis regarded the significant effect that we found of DV in the relationship between COF and COS, confirming our last hypothesis

(*study 3*). Indeed, although COF resulted a significant predictor of COS, the strength of this relationship was reduced when considering the effect of DV. This means that, even if COF is resulted as a significant predictor of COS in our participants, when they internalized negative attitudes toward the visibility and the choice to disclose the own sexual identity in sports-related contexts they showed more difficulties to COS, beyond the role of COF. Therefore, while COF and COS could generally be considered as related phenomena, this is not the case in lesbian and gay athletes with a propensity to silence and deny sexual minorities existences in sport environments. This finding confirms a primary role of internalized negative attitudes toward sexual minorities in lesbian and gay people in representing important barriers to coming-out.

2.5 Limitations of the Studies and Future Research

Our research had several limitations. First of all, these studies relied on a convenience sample that may not have been representative of the population. Another possible limitation is the use of self-report instruments, since they can certainly be influenced by social desirability and can relate to possible biased responding or responder fatigue. Moreover, the SPSS does not distinguish between attitudes toward lesbians and gay men who are athletes or coaches. Although in the initial pool we tried to include items specific to assess negative attitudes toward lesbian and gay men and toward athletes and coaches separately, the factor solution did not effectively retain these items to measure attitudes in an independent way. Therefore, the SPSS should be used to a general assessment of negative attitudes toward lesbian and gay athletes and coaches in sports-related contexts.

We did not examine the differences in the levels of SPSS between different sporting disciplines (i.e., soccer vs. basket vs. swimming) or between the competitive level groups (amateur vs. sub-elite vs. elite), because this was not the purpose of these research.

Future studies should examine possible differences between different sporting disciplines or competitive level groups. Again, future research should verify whether negative attitudes toward LGBT+ athletes/coaches are reflective of the same underlying dimensions (Herek, 2002; Worthen, 2013). Additionally, other factors that may influence attitudes, such as right-wing conservative political ideology, religiosity (Baiocco et al., 2018a), and interpersonal contact with sexual minorities, should be included in future studies. So, future research should verify the validity of the SPSS among different countries, examining different levels of age, sex, sexual orientation, educational level, socioeconomic status, political orientation, and religiosity. Finally, all of the participants were Italian (in *study 1*, *2*, and *3*) and lesbian and gay (*study 3*), and thus, our findings may not apply to sexual minority athletes (including bisexual, intersexual, queer or transgender people) living in other countries.

Moreover, in the *third study* we did not investigate the levels of a positive lesbian/gay identity in participants, that could represent a predictor of coming-out and a protective factor against stress related to concealment (Riggle et al., 2014). Future research should analyze also these components and verifies these assumptions. Moreover, we did not ask participants to indicate the time of their coming-out in the two different contexts of family and sport. Thus, we do not know for sure if disclosure in a context could influence disclosure in the other one. Finally, future studies should deepen the role of sexual prejudice in sports-related contexts, identifying protective and risk factors related to COS, in order to address adequate preventive interventions and educational initiatives on this topic.

Chapter 3. Victimization and bullying in sports-related contexts

3.1 Study 4. Bullying in a sample of Italian gay and heterosexual men

The paper summarizing this research was published in:

Baiocco R., Pistella, J., Salvati, M., Ioverno, S., & Lucidi, F. (2018b). Sports as a risk environment: homophobia and bullying in a sample of gay and heterosexual men. *Journal of Gay & Lesbian Mental Health*. Advance online publication. doi:10.1080/19359705.2018.1489325

Although qualitative (Mishna et al., 2008; Shannon, 2013) and quantitative studies (Evans et al., 2016; Symons et al., 2010; Peguero, 2008; Volk & Lagzdins, 2009) specifically addressing bullying frequencies in sport settings, and it has been found a progressive decline of homophobia in several countries (Anderson, 2009a, 2011a; Anderson, et al., 2016; Bush et al., 2012; Cleland et al., 2016; Melton & Cunningham, 2014; Zipp, 2011), to our knowledge, this issue has not yet been investigated in Italy. Moreover, few previous studies have investigated differences between heterosexual people and sexual minority people in rates of bullying and homophobic bullying in sports-related contexts (Brackenridge et al., 2007; Evans et al., 2016; Peguero, 2008; Rivers, 2001; Symons et al., 2010).

Even the fourth *study* described in the present chapter was conducted in Italy, a country where sexual minorities constantly face the effects of the societal heterosexism (Baiocco et al., 2010). As we reported previously, the Italian situation is unique because of high levels of sexism and stigma around homosexuality, that is related to high levels of

religiosity of the population. In fact, religiosity had a considerable role on Italian development of moral, social and ethical values. Consequently, the recognition of civil rights for LGBT+ people is progressing slowly due to of the link between clerical and political power (Lingiardi et al., 2016). For example, Italy legalized same-sex marriage in 2016, while in other Mediterranean countries with strong Catholic cultural traditions such as Spain and Portugal, the recognition of civil rights for LGBT+ people were already occurred (Ioverno et al., 2018; Petruccelli, Baiocco, Ioverno, Pistella, & D'Urso, 2015). In such a stigmatizing context, the decline of homophobia seems less likely than other countries. In addition, younger gay men have a greater risk of being bullied because of their sexual orientation (Szymanski et al., 2008).

We aim to contribute to an understanding and examining how bullying in sports-related contexts may increase the risk of developing psychosocial problems and highlighting the necessity of policy interventions regarding sport safety and violence prevention in Italy (Russell & Horn, 2016). Despite the little research on bullying in sports-related contexts in Italy, investigating the effects of bullying in a context of socialization (as is the case for sports-related contexts) could be useful to better understand the underlying mechanisms by which these effects operate. In particular, it seems important to study the role of bullying in predisposing individuals to dropout from sport, given that it may indirectly promote no sports participation or increase negative self-evaluation. Thus, to complement previous empirical investigations in this area, the current *study* aimed to examine the relationship between bullying in sports, dropout out of sports due to fear of being bullied, negative self-evaluation (in terms of self-hatred and ISS) and addressing the question of whether this relationship change in sport participants (as compared with non-sport participants) and in gay men (as compared with heterosexual men).

In line with the literature and taking into account the cultural frame of the present *study*, we hypothesize that: (Hypothesis 1) gay men and non-sport participants would report higher levels of bullying and homophobic bullying in sports-related contexts than heterosexual men and sports participants, respectively (Espelage, Aragon, Birkett, & Koenig, 2008); (Hypothesis 2) gay men would show more negative self-evaluation levels than heterosexual men, after controlling for bullying and homophobic bullying (Duarte et al., 2015; Gilbert & Irons, 2008); (Hypothesis 3) according to the original Lingiardi and colleagues' study (2012), younger participants would show more levels of ISS than the other group (26 to 35 years old), after adjusting for bullying and homophobic bullying; (Hypothesis 4) gay men have higher dropout rates for sports due to a fear being bullied compared to heterosexual men (Brackenridge et al., 2007); (Hypothesis 5) gay men face greater pressure from family and friends to choose a particular kind of sport than heterosexual men (Carver et al., 2003). The further aim of this *study* was to explore variation in the descriptions of pressures they received from family and friends. More specifically, the intention was to find out if there was any difference between gay men and heterosexual men regarding the type of pressure and if gay men received more pressures related to gender-nonconforming behavior than heterosexual men (Brackenridge et al., 2007).

3.1.1 Method

Procedures and Participants

Participants were recruited from universities, community recreational centers, and work places in Rome, Italy. Specifically, the majority of sexual minority participants were recruited from LGBT+ organizations in community settings and university in Rome, Italy. Data were gathered through advertisements posted on websites, social networks, emailing, and handing out the online link directing the participants to the survey (hosted by

SurveyMonkey). A brief description of the study, purpose, and inclusion criteria were provided during the announcement. We explained to participants that the purpose of this research was to examine the relationship between sports activities and well-being in Italian men. The explanation was voluntarily generic because we did not want participants to know the actual research objectives. Inclusion criteria were: (a) Italian nationality; (b) male gender; (c) identification as gay or heterosexual; and (d) age (18-35 years old). According these criteria, 10 participants were excluded because their sexual orientation was different by gay or heterosexual ones (6 bisexual, 4 pansexual) and 3 participants were excluded because they completed only the identifying information form.

In total, 94% of distributed questionnaires were completed (completely filled in). Participation in the study was voluntary and anonymous, and respondents answered the same questionnaire individually (20–30 minutes to complete). All potential participants could access the survey only if they had signed informed consent and an indication that they met inclusion criteria described prior to starting. They were also informed of their right to stop completing the survey at any time. No compensation was provided for filling out the questionnaires. The protocol was approved by the Ethics Commission of the Department of Developmental and Social Psychology at the Sapienza University of Rome. The research was conducted in accordance with the Social Research Association's ethical guidelines.

The final sample consisted of 208 Italian male participants who self-identified as heterosexual (57.7%) or gay (42.3%) men. Participants' ages ranged from 18 to 35 (M = 27.20, SD = 4.89). No age differences were found between gay men and heterosexual men, $t(206) = –.394$, $p = .088$. Moreover, 52% of participants indicated they did not practice any sports at the time of completing the questionnaire (56% of gay men and 48% of heterosexual men), and 48% indicated that they practice sports at least once a week

(44% of gay men and 52% of heterosexual men). No differences were found between gay and heterosexual men for practicing sports, $\chi^2(1, 208) = 1.46$, $p = 0.22$.

Measures

Identifying Information. An identifying information form was completed by all participants to collect data related to demographic characteristics. Participants were asked to report their sexual orientation by answering a single item (1 = gay; 2 = heterosexual; 3 = other). In the case of the "other" alternative, participants had the possibility to specify their sexual orientation. Finally, participants were asked if they practiced any sport; namely, they were asked the following question: "Do you practice, at this time, any sport?" (0 = "I don't practice any sports," 1= "I practice at least once a week"). The following definitions of sport participation was given before the question; "in the current study, sport participation is regarded as regular sport activity, which means at least 30 min once per week".

Bullying in sport contexts. Participants were asked to indicate the frequency of bullying they experienced in sports-related contexts with the following question: "How often have you been bullied in sport contexts?". Participants responded to a five-point Likert-type scale (1 = "never" to 5 = "frequently"). This single-question about bullying was based on the World Health Organization's international study of bullying (Nansel et al., 2001), adapting it to sports related-contexts. The following definitions of bullying was given before the question, based on previous research by Olweus (1993); "bullying occurs when a person or group of people repeatedly say or do mean or hurtful things to someone on purpose. Bullying includes things like teasing, hitting, threatening, name-calling, ignoring, and leaving someone out on purpose''. In addition, participants were asked to indicate if they had ever dropped out of sports due to fear of being bullied (no = 0, yes = 1).

Homophobic bullying in sport contexts. Participants were asked to indicate the frequency of homophobic bullying they experienced in sports-related contexts with the following question: "How often have you been bullied about being perceived as gay, lesbian, or bisexual in sport contexts?". Participants could answer on a five-point Likert-type scale (1 = "never" to 5 = "frequently"). The wording for this question was derived from the World Health Organization's international study of bullying (Nansel et al. 2001; Poteat, Mereish, DiGiovanni, & Koenig 2011), adapting it to sports related-contexts. The following definition of homophobic bullying was given before the question (Warwick, Aggleton, & Douglas, 2001); "homophobic bullying takes place where general bullying behavior such as verbal, and physical abuse and intimidation is accompanied by or consists of hostile or offensive action against lesbians, gay males or bisexuals (LGB). In addition, homophobic bullying is experienced by people who are (or are perceived as) LGB, but it can affect any individual who is different in some way from everybody else (e.g. including feminine men, or masculine women").

Pressure to choose a sport. Participants were asked to report if they had ever been pressured by friends or family members to choose a sport: "Have you ever been pressured by your family/friends to choose a particular kind of sport?" (no = 0, yes = 1). If they responded "yes" to either question, we asked them to explain with an open-ended question about the pressure from friends and family members.

The Forms of Self-Criticizing and Self-Reassuring Scale *(FSCRS*; Gilbert et al., 2004). The FSCRS (short version with 12 items) was used to examine the levels of hated self, inadequate self, and reassured self. Participants responded, using a five-point Likert scale (from 0 = not at all like me, to 4 = extremely like me), to series of questions: e.g. "I have a sense of disgust with myself" (hated self); "I am easily disappointed with myself" (inadequate self); "I find it easy to forgive myself" (reassured self). Good convergent

validity has been found with other measures of self-criticism (Dunkley, Saislow, Grilo & McGlashan, 2009; Kupeli, Chilcot, Schmidt, Campbell, & Troop, 2013). In this *study*, the Cronbach's alpha values were .72, .84, and .80, and the split-half reliability were .77, .83, and .82, respectively.

Measure of Internalized Sexual Stigma for Gay Men (MISS-G; Lingiardi et al., 2012). The short version of the MISS-G was used to measure the internalized sexual stigma (Pistella et al., 2016). The scale (6 items) measures the negative attitudes that lesbian and gay people have toward homosexuality and toward this aspect of themselves. "I do not believe in love between gay men" is an example. Participants could answer on a five-point Likert-type scale (from 1 = "I disagree" and 5 = "I agree"). A mean score for these items was used with higher scores, indicating a greater level of ISS. Research with this scale has also demonstrated good convergent validity with other measures of ISS (Lingiardi et al., 2012). In this *study*, the Cronbach's alpha value was .77 and the split-half reliability was .80.

3.1.2 Data Analysis

We used the Statistical Package for the Social Sciences (SPSS 22.0) to conduct the analyses. Pearson (when both variables were continuous), and Spearman's rho (when one variable was ordinal numeric, and one was continuous or ordinal numeric) coefficient correlations, chi-square test (when both variables were dichotomous), and *t*-test statistics (when one variable was continuous and one was dichotomous) were calculated to examine the relationships between variables. Group differences were analyzed using the Chi-Square test, Multiple Analysis of Variance (MANOVA), Multiple Analysis of Covariance (MANCOVA), and Analysis of Covariance (ANCOVA). An Interpretative Phenomenological Analysis (IPA; Smith, Flowers, & Larkin, 2009) was performed to identify emergent themes based on the answers to the open-ended questions posed in the

study. The analysis consisted of a phased process, starting with familiarization with the data. Initially, two independent coders, both psychologists trained in qualitative data analysis, read each answer and coded it manually, line by-line, taking notes and focusing on participants' descriptions and interpretations of what they were saying.

3.1.3 Results

Bullying Crossed by Sexual Orientation and Sports Participation

We performed four association matrices to examine the relationship between key variables in gay men as well as in heterosexual men taking into account their participation in sport: Participants engaged in sports activities (ES; Table 8a) *vs*. participants not engaged in sports activities (NES; Table 8b). We found that being bullied in sports-related contexts was positively correlated with self-hatred in sport participants, regardless of sexual orientation (gay men ES: $r = .39$, $p < .05$; heterosexual men ES: $r = .33$, $p < .01$). In addition, in gay male participants not engaged in sports activities, there was a positive association between ISS and being bullied in sports-related contexts (NES: $r = .34$, $p < .01$), in addition to feelings of self-hatred (NES: $r = .38$, $p > .01$) and self-inadequacy (NES: $r = .34$, $p > .05$), while there was no correlation between ISS and being a victim of homophobic bullying (ES: $r = .19$, $p > .05$; NES: $r = .10$, $p > .05$).

Furthermore, a series of *t*-test indicated that participants who (a) reported dropping out of sports due to fear of being bullied (gay men ES: $M = 2.89$, SD = 1.05; gay men NES: $M = 2.95$, SD = 1.25; heterosexual men NES: $M = 2.82$, SD = 1.25); (b) received pressure to choose a particular kind of sport from family (heterosexual men ES: $M = 2.14$, SD = .90; heterosexual men NES: $M = 2.50$, SD = .76); and (c) received pressure to choose a particular kind of sport from friends (gay men ES: $M = 2.71$, SD = .76; gay men NES: $M = 3.20$, SD = 1.03; heterosexual men ES: $M = 2.50$, SD = .71), presented higher level of bullying than those who have not dropped out of sport (gay men ES: $M = 1.69$, SD = .71,

t[36] = –.3.924, *p* < .001; gay men NES: *M* = 2.07, SD = 1.15, *t*[48] = –2.589, *p* = .013; heterosexual men NES: *M* = 1.64, SD = .73, *t*[56] = –4.143, *p* < .001), those who have not received pressure from family (heterosexual men ES: *M* = 1.45, SD = .57, *t*[60] = –2.801, *p* = .007; heterosexual men NES: *M* = 1.76, SD = .96, *t*[56] = –2.075, *p* = .043), and friends (gay men ES: *M* = 1.81, SD = .91, *t*[36] = –2.448, *p* = .019; gay men NES: *M* = 2.28, SD = 1.26, *t*[48] = –2.143, *p* = .037; heterosexual men ES: *M* = 1.50, SD = .62, *t*[60] = –2.223, *p* = .030).

Additionally, gay male participants who have dropped out of sport due to fear of being bullied reported higher level of homophobic bullying (gay men ES: *M* = 2.78, SD = 1.09; gay men NES: *M* = 2.32, SD = 1.25) and showed higher levels of self-hatred (gay men NES: *M* = 1.87, SD = .81), and ISS (gay men ES: *M* = 2.83, SD = .59) than those who have not dropped out of sport on the levels of homophobic bullying (gay men ES: *M* = 1.38, SD = .67, *t*[36] = –4.648, *p* < .001; gay men NES: *M* = 1.54, SD = 1.07, *t*[48] = –2.383, *p* = .021), self-hatred (gay men NES: *M* = 1.35, SD = .42, *t*[48] = –2.872, *p* = .006) and ISS (gay men ES: *M* = 1.92, SD = .83, *t*[36] = –3.001, *p* = .005). The other *t*-test and chi-square analyses were not significant. For parsimonious reasons, we only reported statistically significant differences in this exploratory analysis.

Table 8a. Participants Engaged in Sport Activities: Associations for Gay Men (*n* = 38, below the diagonal), and Heterosexual Men (*n* = 62, above the diagonal)

	1	2	3	4	5	6	7
1. Age	1.00	09	–.13	–.10	–.06	–.14	/
2. Victim of bullying in sports-related contexts	.08	1.00	.28*	.33**	.04	.15	/
3. Victim of homophobic bullying in sports-related contexts	–.07	.49**	1.00	–.19	–.04	.01	/
4. Hated self (self-criticizing scale)	–.17	.39*	.04	1.00	.38**	–.22	/
5. Inadequate self (self-criticizing scale)	–.33*	.20	.08	.66**	1.00	–.33**	/
6. Reassured self (self-criticizing scale)	.04	.16	.26	–.29	–.27	1.00	/
7. Internalized Sexual Stigma^	–.22	.23	.19	.09	.31	.14	1.00

Note. * $p < .05$. ** $p < .01$. ^ Internalized Sexual Stigma refers only to gay participants. Participants rated the continuous measures on "victims of bullying in sports-related contexts" and "victim of homophobic bullying in sports-related contexts" (1= never to 5 = frequently)

Table 8b. Participants not Engaged in Sports Activities: Associations for Gay Men (*n* = 50, below the diagonal), and Heterosexual Men (*n* =58, above the diagonal)

	1	2	3	4	5	6	7
1. Age	1.00	.15	.10	–.15	–.06	–.09	/
2. Victim of bullying in sports-related contexts	–.12	1.00	.13	.13	.24	.07	/
3. Victim of homophobic bullying in sports-related contexts	–.33*	.39**	1.00	–.07	–.04	–.12	/
4. Hated self (self-criticizing scale)	–.04	.26	.24	1.00	.56**	–.19	/
5. Inadequate self (self-criticizing scale)	.12	.02	–.02	.59**	1.00	–.19	/
6. Reassured self (self-criticizing scale)	–.26	–.08	.21	–.44**	–.39**	1.00	/
7. Internalized Sexual Stigma^	–.05	.34*	.10	.38**	.34*	–.24	1.00

Note. * $p < .05$. ** $p < .01$. ^ Internalized Sexual Stigma refers only to gay participants. Participants rated the continuous measures on "victims of bullying in sports-related contexts" and "victim of homophobic bullying in sports-related contexts" (1= never to 5 = frequently)

Sports Participation and Sexual Orientation Differences in Bullying and Homophobic Bullying

About half of the total sample reported experiencing bullying or homophobic bullying at least once in sports-related contexts (*n* = 127; 61.1%): 27 gay men (13%) and 49 heterosexual men (23.6%) reported that they were bullied in sports environments for non-homophobic reasons, 3 gay men (1.4%) and 4 heterosexual men (1.9%) were victims of homophobic bullying in sport, and 33 gay men (15.9%) and 11 heterosexual men (5.3%) reported that they were victims of both types of bullying in sports-related contexts.

We conducted a 2 (sexual orientation: gay vs. heterosexual) *x* 2 (sport participation: participation vs. no participation) MANOVA on bullying and homophobic bullying in sports. The analysis revealed a significant effect for sexual orientation, Wilks' Λ= .90; $F(2,203) = 11.30$; $p < .001$, and sports participation, Wilks' Λ= .96; $F(2,203) = 4.47$; $p = .01$, and no significant interaction on sexual orientation *x* sports participation, Wilks' Λ= .99; $F(2,203) = .18$; $p = .83$. There was a more significant difference between the scores of gay men than those of heterosexual men and between participants not engaged in sports activities vs. those involved in sports activities. In particular, gay men reported higher bullying, $F(1,204) = 14.58$; $p < .001$, $\eta_p^2 = .07$, and homophobic bullying frequencies, $F(1,204) = 14.92$; $p < .001$, $\eta_p^2 = .07$, than heterosexual men. Conversely, participants who were not engaged in sports activities showed higher bullying, $F(1,204) = 8.99$; $p = .003$, $\eta_p^2 = .04$, but not homophobic bullying frequencies, $F(1,204) = .78$; $p = .37$, $\eta_p^2 < .01$, than sport participants. Mean and standard deviations are shown in Table 9.

Table 9. Means and Standard Deviations for Bullying and Homophobic Bullying in Sports by Sexual Orientation and Sports Participation

	Bullying in Sports			Homophobic Bullying in Sports		
	M	*F*	*p*	*M*	*F*	*p*
Sexual Orientation*						
Gay Men (*n* = 88)	2.25 (1.16)	14.58	<.001	1.81 (1.11)	14.92	<.001
Heterosexual Men (*n* = 120)	1.69 (.82)			1.28 (.81)		
Participation in Sports**						
Sports Participation (*n* = 100)	1.70 (.80)	8.99	.003	1.42 (.88)	.78	.37
No Sports Participation (*n* = 108)	2.14 (1.15)			1.57 (1.07)		
Total Sample (*n* = 208)	1.93 (1.02)			1.50 (.98)		

Note. Standard deviations are in parentheses. *Significant main effect of sexual orientation on both dimensions of bullying (bullying and homophobic bullying). **Significant main effect of sports participation only on dimension of bullying in sports

Bullying and Homophobic Bullying as Covariates in the FSCRS dimensions

One-way MANCOVA was used in order to see whether there were differences in negative self-evaluation levels by sexual orientation after controlling for bullying and homophobic bullying. All three of FSCRS dimensions (hated self, inadequate self, and reassured self) were used as dependent variables. The analysis revealed a significant effect for bullying, Wilks' Lambda = .94; $F(3,202) = 4.01$; $p = .008$, $\eta_p^2 = .06$, but no significant main effect of sexual orientation, Wilks' Lambda = .98; $F(3,202) = .77$; $p = .512$, $\eta_p^2 = .01$, and homophobic bullying, Wilks' Lambda = .98; $F(3,202) = 1.16$; $p = .328$, $\eta_p^2 = .02$. The effect of bullying in sports was significant for the hated self, $F(1, 204) = 10.39$, $p = .001$, $\eta_p^2 = .049$, and inadequate self, $F(1, 204) = 5.28$, $p = .023$, $\eta_p^2 = .028$, but not associated with the reassured self, $F(1, 204) = .02$, $p = .985$, $\eta_p^2 < .001$. Participants who reported higher bullying rates in sports showed higher levels of self-hatred and self-inadequacy, but they did not show lower levels of self-reassurance than those who reported lower bullying frequencies.

Sexual orientation was not significantly associated with the hated self, $F(1, 204) = 2.13$, $p = .146$, $\eta_p^2 = .010$, with the inadequate self, $F(1, 204) = 3.04$, $p = .08$, $\eta_p^2 < .02$, and reassured self, $F(1, 204) = .12$, $p = .735$, $\eta_p^2 < .01$, subscales. Therefore, there was not a significant difference between gay men and heterosexual men in the FSCRS dimensions. Similar results were found for homophobic bullying experience, which were not associated with hated self, $F(1, 204) = 1.23$, $p = .269$, $\eta_p^2 = .006$, with the inadequate self, $F(1, 204) = 2.03$, $p = .156$, $\eta_p^2 = .010$, and reassured self, $F(1, 204) = .01$, $p = .985$, $\eta_p^2 < .001$. Mean and standard deviations are shown in Table 10. These results showed a significant effect of bullying in sports as covariate but no significant main effects of sexual orientation. Thus, victims of bullying, regardless of sexual orientation or homophobic bullying experiences,

reported higher levels of hated self, inadequate self, but not of reassured self than those who reported lower bullying frequencies.

Table 10. Means and Standard Deviations for Self-Criticizing Subscales by Sexual Orientation

	Hated self	Inadequate self	Reassured self
	M (DS)	*M* (DS)	*M* (DS)
Sexual Orientation			
Gay Men (*n* = 88)	1.63 (.78)	2.80 (.95)	3.34 (.80)
Heterosexual Men (*n* = 120)	1.43 (.50)	2.53 (.86)	3.37 (.78)
Total Sample (*n* = 208)	1.52 (.64)	2.64 (.91)	3.36 (.78)

Note. Standard deviations are in parentheses. No significant main effect of sexual orientation on FSCRS dimensions. Bullying and homophobic bullying was used as covariates

In gay male participants, ANCOVA was used to examine the differences in the level of ISS for the age groups (18–24, *n* = 31, vs. 25–35 years old, *n* = 57). We included covariates to adjust for bullying and homophobic bullying. The main effect of age was not significant, $F(1, 84) = 1.08$, $p = .300$, $\eta_p^2 = .013$. Therefore, the two age groups did not differ from each other (18–24: $M = 2.09$, SD = 1.03; 25–35: $M = 1.85$, SD = .72). With regard to covariate modelled, only bullying in sports was significant, $F(1, 84) = 11.06$, $p = .001$, $\eta_p^2 = .328$, whereas homophobic bullying was unrelated to ISS, $F(1, 84) = .75$, $p = .758$, $\eta_p^2 = .116$.

Dropout from Sports and Pressure to Choose a Sport: Sexual Orientation Differences

Using a series of chi-square analyses (Table 11), we further examined differences in sexual orientation in relation to frequency of dropout from sports out of fear of being bullied and of pressures received from friends and family members to choose a particular kind of sport. As we expected, gay participants reported significantly higher dropout from

sports due to a fear of being bullied (n = 31; 35%) relative to heterosexual participants (n = 16; 13%), $\chi^2(1, 208) = 13.914$, $p < .001$.

Table 11. Differences between gay men and heterosexual men in dropping out of sports and pressures from family and friends

Sport dropout and pressures in sports-related contexts	Total Sample (n = 208)	Heterosexual men (n = 120)	Gay men (n = 88)	χ^2
Sport dropout due to a fear of being bullied	47 (22.6%)	16 (13.3%)	31 (35.2%)	13.91**
Pressures to choose a sport by friends	22 (10.6%)	5 (4.2%)	17 (19.3%)	12.32**
Pressures to choose a sport by family	33 (15.9%)	15 (12.5%)	18 (20.5%)	2.41

Note. * $p < .01$. ** $p < .001$. The χ^2 refers to the difference between heterosexual men and gay men. Statistics on "sport dropout due to a fear of being bullied", "pressures to choose a sport by family" and "pressures to choose a sport by friends" refers to the answer "yes" to the questions

Moreover, gay men (n = 17; 19%) received more pressure from friends to choose a particular kind of sport than heterosexual men (n = 5; 4%), $\chi^2(1, 208) = 12.323$, $p < .001$. No differences between gay men (n = 18; 20.5%) and heterosexual men (n = 15; 12.5%) were found for pressure from family, $\chi^2(1, 208) = 2.407$, $p = .121$ (Table 11). Additionally, most relevant to the goal of the study, we analyzed the content of the open-ended question that asked participants to explain the particular kind of pressure they received from family and friends ("What kind of pressures did you receive from friends and family regarding your choice of sport?"). IPA identified two different main categories (Table 12): "masculine-type sport," which included homophobic insults or pressures

related to not conforming to gender norms, and "intrinsic quality of the sport," which included motivation related to the specific characteristics of the sport.

Regarding the family context, gay men reported more "masculine-type sport" answers (gay men: 10 out of 18; heterosexual men: 3 out of 15). Heterosexual men reported more answers related to the "intrinsic quality of the sport" (gay men: 8 responses out of 18; heterosexual: 12 out of 15). Regarding the question about pressures received from friends, gay men reported more "masculine-type sport" answers (gay men: 14 out of 17; heterosexual men: 2 out of 5) and less answers related to the "intrinsic quality of the sport" (gay men: 3 out of 17; heterosexual men: 3 out of 5). Although the aim of IPA is to understand the meanings of experiences rather than measure their attendance (Smith et al., 2009), we indicated the frequencies expressed by participants to simplify the complexities of the open-ended questions.

Table 12.

Example of a Theme Table Showing the Types of Answer from Two Open Questions

	Pressures to choose a sport: family's answers	**Pressures to choose a sport: friends' answers**
Masculine-type sport	"You are a boy and you have to play soccer"	"It's a sport for women"
	"Do you want to be call with homophobic names by the other?"	"It's so gay!"
	"My parents said me that I had to change sport because it was embarrassing"	"Only faggots play this sport"
Intrinsic quality of the sport	"You should swim because it's better for your health"	"The soccer is a better sport"
	"Martial art is a violent sport"	"You have to choose the basket because is better"
	"It's not a sport appropriated to the growth"	"It is not a real sport: the soccer makes you stronger"

Note. Transcription of some answers to the following questions: " have you ever been pressured by your family to choose a particular kind of sport?" and " have you ever been pressured by your friends to choose a particular kind of sport?"

3.2 Study 5. Victimization in a sample of Texas students

The paper summarizing this research was submitted in:

Pistella, J., Ioverno, S., Russell, S. T. (*Submitted*). Unhealthy Weight Control Behaviors in a representative sample of Texas youth: The role of sexual identity, gender, and peer victimization. *International Journal of Eating Disorders*[1].

The *fifth study* was conducted in Texas during my visiting scholar period at the University of Texas at Austin to examine the role of peer victimization on UWCB, in particular on physical activity and physical education. An element of originality of this research has been take into account the perspective of Texas students. In fact, Texas is a socially and politically conservative state (Alderman et al., 2005; Kosciw et al., 2016), where negative attitudes toward sexual minorities are still rife compared to other regions of the United States. As we reported previously (see chapter 1, pp. 22–23), only one study (Thapa & Kelvin, 2017) examined the relationship between victimization and UWCB. This study found significant three-way interactions between gender, sexual identity and peer victimization (dating violence and electronic bullying), but no effect modification by gender and sexual identity of the association between bullying at school and UWCB was found. This result may be explained by the fact that the study used a representative sample of New York students, and in the United States there is an overall trend of increasing acceptance of sexual minorities (Alderman et al., 2005).

[1] This research was supported by grant, P2CHD042849, Population Research Center, awarded to the Population Research Center at The University of Texas at Austin by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (USA). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. The authors acknowledge generous support from the Communities for Just Schools Fund, and support for Russell from the Priscilla Pond Flawn Endowment at the University of Texas at Austin. In addition, the research reported was supported by Sapienza University of Rome (Mobility Projects Call for Research Doctorates) under award number 2682/2017 (0051266).

However, the aforementioned study did not consider others individual and relational variables that previous literature found strongly associated with the higher prevalence of disordered eating in youth, such as being overweight (Van Geel et al., 2014), moderate but not excessive physical activity (Hausenblas & Fallon, 2006), and the lack of adults' support (Vander Wal, 2012), and no empirical studies considered the interactive effects of all these variables on UWCB in the same study.

Therefore, our research has two main objectives. The first is to examine whether some individual and relational variables would be risk factors for the UWCB, including being overweight, moderate but not excessive physical activity, and the lack of adults' support. The second objective is to determinate the relationship between UWCB, peer victimization, sexual identity and gender, after inserting individual and relational variables considered as significant predictors of UWCB.

3.2.1 Method

Procedures and participants

This *study* used data from the 2017 Texas Youth Risk Behavior Survey (YRBS), a representative sample of students in grades 9 to 12 in the U.S. state of Texas assessing a range of demographic, physical/mental health, social attitudes, and behavioral variables. Participation in the National survey was voluntary and anonymous, and respondents answered the same questionnaire individually (30 minutes to complete). They were also informed of their right to stop completing the survey at any time. No compensation was provided for filling out the questionnaires. Detailed information regarding the YRBS has been previously described (Kann et al., 2014) and is available on http://www.cdc.gov/healthyyouth/yrbs.

Given that the 2% (n = 46) of the participants did not reveal their sexual orientation, we excluded them from the analysis. The final sample included 2,067 students

(1,754 heterosexuals and 313 sexual minorities). Students' ages ranged from 12 to 18 (M = 15.97, SD = 1.24). No age differences were found between gay men and heterosexual men, $t(2060) = 1.35$, $p = .176$. The original study (Thapa & Kelvin, 2017) used the same survey from 2011 YRBS with a sample of New York City students.

Measures

Identifying Information. Each variable was assessed via a single question. All variables were dichotomized except for age, which was used as continuous variable. Sociodemographic and personal variables included gender (female = 1; male = 0), sexual identity status (1 = sexual minority; 0 = heterosexual), and ethnicity (dichotomous variables for White, Black or African American, Hispanic, and other race/ethnicity). Using BMI, we categorized a variable to indicate whether participants were overweight based on 2000 CDC Growth Charts (Kuczmarski et al., 2002).

UWCB. Weight control behaviors were assessed with the question "during the past 30 days, did you try to lose weight or keep from gaining weight by going without eating for 24 hours or more; taking any diet pills, powders, or liquids; vomiting or taking laxatives; smoking cigarettes; or skipping meals?", (no = 0, yes = 1). Participants who indicated that they made themselves vomit and/or took diet pills were classified as using unhealthy weight control behaviors.

Protective/risk factors for UWCB

Physical activity. We measured physical activity based on the number of days had been active at least 60 minutes in the last 7 days (coded as 1 = < 5 day for week, 0 = > 5 days for week).

Parental adult support. Perceptions of parental adult support figure were assessed with the question "Besides your parents, how many adults would you feel comfortable

seeking help from if you had an important question affecting your life?" (coded as 1 = no, 0 = yes).

Peer victimization. Experience of dating violence (how many times did someone you were dating or going out with physically hurt you on purpose?), cyberbullying (you ever been electronically bullied?), and bullying at school (have you ever been bullied on school property?) during the past 12 months were assessed (coded as 1 = yes, 0 = no).

3.2.2 Data Analysis

All analyses were conducted using Stata 15. Missing values on any of the variables were addressed by using multiple imputation. For each measure, we conducted a weighted logistic regression to examine whether there were statistically significant differences between gender and sexual identity on variables considered in the study. Moreover, the relationships between UWCB and the covariates were investigated using weighted logistic regression; all possible two-way and three-way interactions from this model were then added, with only significant interactions retained for the final model.

3.2.3 Results

Unweighted frequencies and weighted percentages are provided in Table 13. Sexual minority female students were more likely to be overweight, to be victims of cyberbullying, and were less likely to engage in physical activity than female counterparts. Bullying at school, dating violence experience, and UWCB were much more prevalent in sexual minority males compared to heterosexuals (both males and females), while there was not a significant difference with sexual minority females.

Table 13. Descriptive statistics for study variables by gender and sexual identity. Logistic regression predicting unhealthy weight control behaviors; estimated odds ratios and 95% confidence intervals among Texas school students

	Heterosexuals *n* (1,754)		Sexual minorities *n* (313)		*Logistic Regression*
	Male *n* (856)	Female *n* (891)	Male *n* (93)	Female *n* (215)	*OR* for UWCB
	M (SD) n (%)	*M (SD) n (%)*	*M (SD) n (%)*	*M (SD) n (%)*	(95% *CI*)
Unhealthy weight control behaviors (Yes)	81 (10.2)a	198 (25.8)b	32 (41.0)c	55 (28.5)bc	/
White	184 (16.1)	210 (15.7)	16 (8.6)	38 (17.8)	/
Black or African American	59 (6.7)	59 (5.5)	10 (7.3)	15 (9.5)	1.15 (.54; 2.41)
Hispanic	523 (26.3)	560 (23.6)	57 (16.3)	139 (33.6)	.79 (.53; 1.18)
Other race/ethnicity	68 (4.1)a	43 (2.1)b	6 (2.2)ab	16 (4.7)ab	.93 (.48; 1.82)
Age (Years)	16.08 (1.25)	15.9 (1.23)	15.87 (1.21)	15.89 (1.54)	1.18 (1.03, 1.36)*
Overweight (Yes)	308 (19.4)ab	294 (16.1)a	36 (15.8)bc	87 (29.8)c	1.78 (1.25, 2.55)**
Physical activity (< 5 days for week)	418 (48.1)a	568 (63.3)b	58 (48.4)abc	149 (72.5)c	1.37 1.10, 1.71)**
Adults' support (No)	193 (21.9)a	175 (18.6)ab	26 (30.5)ac	52 (22.3)abc	1.59 (1.12, 2.24)*
Dating Violence (Yes)	24 (3.00)a	40 (5.00)ab	7 (9.56)b	13 (4.41)ab	1.67 (.78, 3.59)
Cyberbullying (Yes)	68 (8.57)a	155 (18.33)b	17 (16.14)abc	61 (28.47)c	1.49 (1.17, 1.90)**
Bullying at school (Yes)	108 (14.0)a	175 (20.3)b	29 (34.8)c	59 (26.8)bc	1.90 (.73, 4.98)
Gender (Female)	/	/	/	/	3.43 (2.12, .5.56)***
Sexual identity (Sexual minorities)	/	/	/	/	3.94 (1.72, 9.01)**
Interaction effects					
Gender X Bullying	/	/	/	/	.63 (.20, 2.03)
Sexual minorities X Bullying	/	/	/	/	3.67 (.90, 14.96)
Gender X Sexual minorities	/	/	/	/	.30 (.12, .74)**
Gender X Sexual minorities X Bullying	/	/	/	/	.22 (.06, .85)*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. 95% *CI* = confidence interval; OR = odds ratio. The values followed by the same letter, in the same row, did not show significant difference from each other using 95% *CI* for odds ratio estimates. Frequencies refer to the number of participants who reported negative perceptions, episodes or behaviors.

Results of final weighted logistic regression analyses (Table 13, last column) showed that the risk for UWCB was higher for older age, *OR* = 1.18, *p* = .02, females, *OR* = 3.43, *p* < .001, overweight students, *OR* = 1.78, *p* < 01, and for those who reported low levels of adults' support, *OR* = 1.59, *p* = .02, and low physical activity, *OR* = 1.37, *p* < .01.

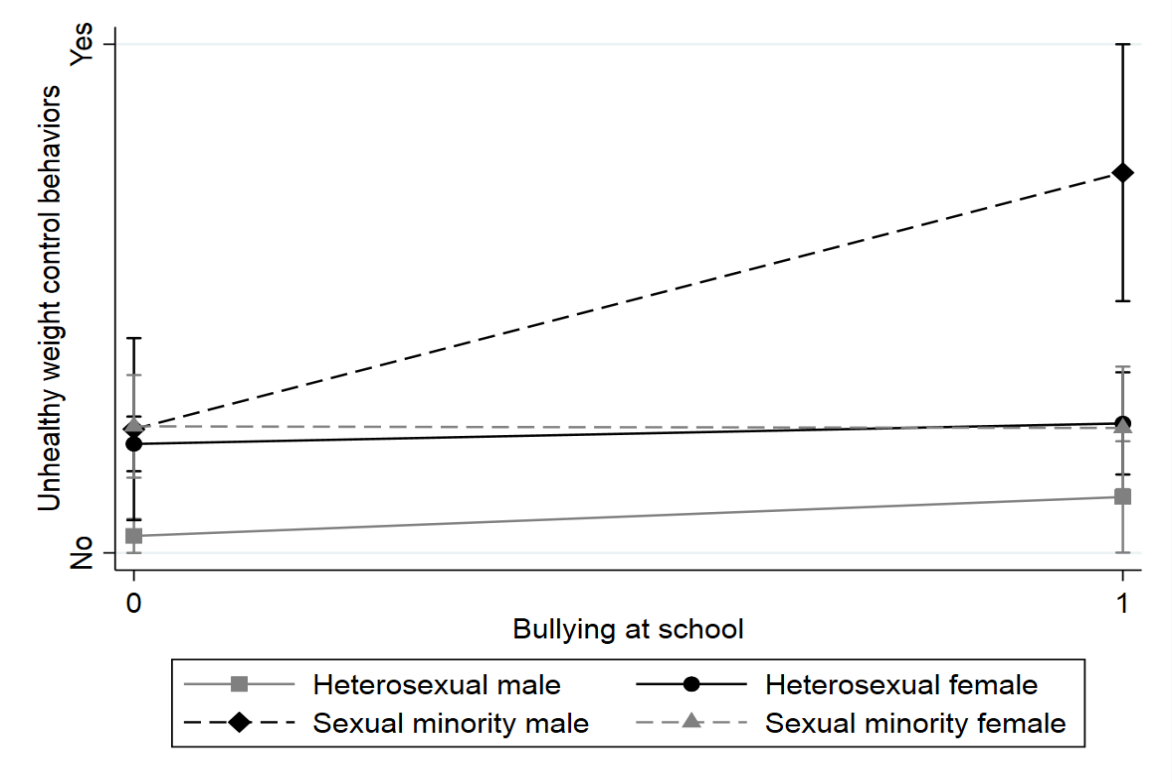
In addition, there were significant associations of UWCB with bullying (*OR* = 1.95, *p* = .001), cyberbullying (*OR* = 1.72, *p* < .001) and dating violence (*OR* = 2.21, *p* = .031); in the model including all three forms of victimization together, only bullying was significantly associated with UWCB (*OR* = 1.65, *p* = .048), while cyberbullying (*OR* = 1.31, *p* = .119) and dating violence (*OR* = 1.83, *p* = .107) were not.

We then tested a series of two- and three-way interactions between each form of victimization, sexual identity, and gender. There was a significant and positive three-way interaction effect of gender, sexual identity and bullying at school, *OR* = .24, *p* = .03 (Table 13, last column). However, the association between cyberbullying and UWCB became significant when controlling for the interaction term. There were no further significant interactions in the model.

To further explore the nature of the three-way interaction effect, simple slope analysis was performed. The simple slope (Figure 4) revealed that sexual minority males who experienced bullying at school were most likely to report UWCB, *b* = .43, p = .004, while the same association was not significant for sexual minority females, *b* = -.01, p = .971, heterosexual males, *b* = .07, p = .225, and heterosexual females, *b* = 03, p = .473. The results indicated that sexual minority males who experienced bullying at school were more likely to report UWCB than all other participants.

Figure 4.

Bullying at school is a moderator of unhealthy weight control behaviors only in sexual minority males



3.3 General Discussion

The *fourth study* aims to extend knowledge about experiences of bullying and homophobic bullying in sports-related contexts in a sample of gay men and heterosexual men, both sport participants and non-participants. The retrospective nature of the study did not permit evaluation of the effect of bullying and homophobic bullying on current sports participation of the sample or to confirm a progressive decline of homophobia in Italian sports-related contexts (Anderson, 2009a, 2011a; Anderson et al., 2016; Cleland et al., 2016; McCormack, 2012; Zipp, 2011). However, some individuals could continue to be troubled by recollections of bullying long after they had left sport, and these could have an important consequence on current sports participation (Rivers, 2004).

First and foremost, this *study* examined whether being bullied in sports was significantly associated with self-hatred. Findings were in line with previous research (Duarte et al., 2015; Matos et al., 2012). Bullying was associated with feeling of self-hatred in sport participants. This finding suggests that victimization arouse negative self-evaluation in those participants who still frequent places potentially associated with their personal experience of bullying (Roth, Coles, & Heimberg, 2002). Indeed, bullying was also associated with dropping out from sport for fear of being bullied in all respondents. This positive relation may be explained through the coping style identified as "avoidance-oriented strategy" (Endler & Parker, 1994), a coping strategy intended to solve problems and it represent the efforts of people to face (and overcome) stressful situations. One such explanation highlight that victims of bullying used avoidance behaviors as a coping response to stressful event, with persistent desire to get away from or avoid a situation or environment related to the traumatic event. The result provides support for the overall effect of bullying on sport avoidance, such that participants who self-report victimization are also likely to report avoidance behaviors.

A further interesting finding was that feelings of self-hatred were strongly associated with dropping out only in gay men non-participants. One explanation is that the expectation of being rejected or discriminated by others can lead to increased minority stress, as discussed in previous study (Meyer, 2003). The expectation of such negative events (with corresponding vigilant and avoidance behavior) is one of the three components of the minority stress model. The other two components of this model are: 1) external objective events, such as discrimination and violence; and 2) internalized sexual stigma. Consequently, bullying in sports-related contexts and the expectation of being discriminated are risk factors in dropping out from sport, with notable increases in negative psychological outcomes, including negative self-evaluation (as self-hatred) and

internalized sexual stigma (Meyer, 2003; Pistella et al, 2016). Although the patterns of correlations across the various groups were somewhat different, the results should be interpreted cautiously because subsample sizes were small.

The results from MANOVA showed that gay men reported higher levels of bullying and homophobic bullying in sports-related contexts compared to heterosexual men (Hypothesis 1). These differences may still reflect homophobic and discriminatory behaviors based on stereotypes of masculinity (Lingiardi et al., 2016; Petruccelli et al., 2015; Plummer, 2006), which are also present in sports environments because sports are a cultural idealization of masculinity (Drummond et al., 2015). This finding is not surprising because Italy is a country where sexual minorities constantly face the influences of the Catholic perspective, but also of the societal heterosexism and homophobic climates (Baiocco et al., 2010; Barcaccia et al., 2018; Lingiardi et al., 2016; Pistella et al., 2016). However, as recently Magrath (2017) pointed out higher bullying and homophobic bullying frequencies in gay men could be read considering the prevalence of banter, such as bum-touching, testicle slaps, and feigned sexual attractions toward teammates in various settings. Bantering and "homosexually-themed language" with others (McCormack, Wignall, & Morris, 2016), such as the common expressions "gay" and "that's so gay", were one way to show friendship and inclusivity, without the intent to wound or marginalize other boys. Nevertheless, many gay men could feel bullied, while the intention was probably not to offend, or to belittle anyone.

Furthermore, we found that sport participants reported more bullying than non-sport participants, thereby suggesting the potential influence of being bullied on sports participation. Specifically, bullying occurring less frequently in people participating in sports activities, indicates that sports participation may protect people from victimization, as reported in a previous study (Volk & Lagzdins, 2009). One explanation for the higher

frequency of bullying in non-sport participants compared to sport participants may be that many people leave their sports because of bullying and the fear associated with it (Kopels, & Paceley, 2012), as previously discussed (Endler & Parker, 1994). However, these findings concerning sports participation should be interpreted cautiously due to the retrospective nature of the items about bullying and homophobic bullying.

Respondents who were victims of bullying in sports-related contexts reported higher levels of self-hatred and self-inadequacy than those who reported lower bullying frequencies (Hypothesis 2). These differences may reflect the strong effects of being bullied beyond one's sexual orientation, indicating that experiences such as bullying can activate feelings of self-hatred and self-inadequacy, for such experiences in bullied persons may indicate that the self creates in others desires to reject, persecute or harm the self (Gilbert & Irons, 2008). Findings were in line with previous research suggesting that such traumatic experiences play a crucial role in well-being and in the formation of maladaptive defensive strategies (Duarte et al., 2015). Additionally, traumatic or stressful social experiences such as bullying are one of the strongest risk factors for self-harm (West, Newton, & Barton-Breck, 2013).

We conjectured that younger gay men (18–24 years of age) would report more levels of ISS than older group (25–35 years of age), but this third hypothesis was not confirmed. ISS levels did not differ significantly when comparing younger participants to older group. Probably, in comparison to the previous study (Lingiardi et al., 2012), the small number of the participants enrolled in this research (n = 31 vs. n = 57 gay men), and the lack of lesbian women in the sample, may have influenced the result. Nevertheless, we found that gay men who were bullied in sports-related contexts reported higher levels of ISS than gay men who reported lower bullying frequencies (Hypothesis 3). Compared to their counterparts who were not bullied, gay men who were bullied may have interpreted these

prejudices as signs of societal disfavor and condemnation of sexual minority status, which would lead to higher levels of ISS and negative attitudes toward themselves (Blais et al., 2014). These feelings of diversity suffered in a context of socialization and integration, as is the case for sports-related contexts, can have a significant influence on the relational well-being of people who identify as LGB. Moreover, this finding is notable when collocated in the context of the increased risk LGB people have for developing poor mental health (Meyer, 2003), and the well-being impact of sexual stigma on gay athletes.

Results showed that gay men reported higher rates of sport dropout due to fear of being bullied (35% *vs* 13%) compared to heterosexual men (Hypothesis 4). This is consistent with previous studies on the subject (Brackenridge et al., 2007; European Union Agency for Fundamental Rights, 2011). In fact, similar results patterns were found by Bouris and colleagues in a school context (Bouris, Everett, Heath, Elsaesser, & Neilands, 2016): LGBT+ students were more likely to skip school to avoid victimization than heterosexual students. This finding is in line with our previous result (hypothesis 1) about higher prevalence of bullying in gay men than heterosexual men and in non-sports participants than sport participants. A possible explanation of this result could be the fact that those who have been victims of bullying in sports have less wish to participate in sport activities due to the fear and risk of being assaulted again (European Union Agency for Fundamental Rights, 2011), and this evidence is stronger in gay men because they are generally more bullied than heterosexuals. In trying to create an inclusive environment, therefore, sports-related contexts should be looking to reduce the risks, barriers, and prejudices that sexual minorities encounter in sports settings in order to increase their sport participation and, consequently, their well-being.

Moreover, gay male participants (19% vs 4%) reported greater pressure to choose a particular kind of sport from friends than their heterosexual counterparts (Hypothesis 5),

whereas no difference in pressure was found when looking at family members. Results partially confirmed our fifth hypothesis. Analysis of answers to the open-ended questions regarding the type of pressure (using IPA) indicated that gay men reported greater pressure related to "masculine-type sport," and less pressure related to "intrinsic quality of the sport" from friends and family members.

These findings suggested that gay men perceive greater pressure to conform to masculine stereotypes and gendered norms (Eng, 2008; Griffin, 1993; Herek & Garnets, 2007; Salvati et al., 2018a) in sports-related contexts, because they may be perceived as "a risk" to the norm (Giritli Nygren, Öhman, & Olofsson, 2017). Previous studies on people who identify as LGB have found greater parental pressure aimed at discouraging gender atypical behavior during childhood (D'Augelli et al., 2006; O'Brien, Putney, Hebert, Falk, & Aguinaldo, 2016). Indeed, parents or friends are eager to press their son or their friend toward masculinity, because they are worried that their boy or their friend may become feminine (Martin, 1990). For instance, the parents might be concerned that their feminine boys will grow up to be homosexual or transsexual (Sandnabba & Ahlberg, 1999).

Regarding the *fifth study*, we used a representative sample of Texas students to investigate the relationship between peer victimization and unhealthy weight control behaviors. To our knowledge, this research is one of the first to investigate how gender and sexual identity may modify the association between peer victimization and UWCB, after controlling for individual and relational variables in a sample of adolescents.

First and foremost, gender and sexual orientation differences for each measure were investigated. Findings showed that UWCB were more common in sexual minority males compared to heterosexuals. This result is not surprising because it is consistent with previous literature, which suggested that sexual minority males are especially at risk for

disordered eating behaviors and weight-related concerns (see Miller & Luk, 2018 for a review).

We found that weight problem, and low sport participation were more prevalent in sexual minority females than heterosexuals females. These findings are in line with previous research: obesity rates, and consequently low frequency of physical activity, are higher in sexual minority females than among their heterosexual counterparts (Yancey, Cochran, Corliss, & Mays, 2003). Bergeron and Senn (1998) argues that sexual minority females tend to worry less about their body weight and their physical appearance because the overall rejection of traditional gender norms. Others scholars suggest that this disparity may be related to body image ideals among sexual minority females: They are more likely to be satisfied with higher body weight compared to heterosexual women and to be attracted to women with greater BMI, and thus they may be less motivated to engage in dieting and physical activity behaviors (Austin et al., 2004; Morrison, Morrison, & Sager, 2004; Swami & Tovée, 2006). In addition, there were notable differences in victimization experiences based on sexual identity and gender. Specifically, consistent with prior studies, sexual minority females were more likely to experience cyberbullying compare to heterosexual females (Abreu & Kenny, 2018), while sexual minority males were more likely to report dating violence and bullying at school compared to heterosexual males (Martin-Storey, 2015; Toomey & Russell, 2016).

In multivariate analyses we found that UWCB was significantly associated with being over-weight, engaging in low physical activity and lack of support from adults. Future studies of UWCB should account for these important covariates. As previous research has shown (Vander Wal, 2012), the result that high perceived social support may be a protective factor in the use of UWCB was confirmed.

The final purpose of the *study* was to explore the interaction effects among gender, sexual identity and peer victimization. We did not find a modification effect of dating violence or cyberbullying on UWCB by gender and sexual orientation. In addition, there were not significant interactions with Hispanic ethnicity, peer victimization, gender, and sexual identity in predicting UWCB, while cyberbullying without interaction terms, but not dating violence, was a significant predictor of UWCB.

Moreover, the analysis revealed a complex three-way interaction between bullying at school, gender and sexual identity, indicating that the effect of bullying on UWCB was stronger among sexual minority males compared to other participants. Previous research did not find this effect in a sample of New York youth (Thapa & Kelvin, 2017). A possible explanation of these different findings could be the fact that the Texas, as well as other conservative countries or regions (Alderman et al., 2005; Kosciw et al., 2016; Lingiardi et al., 2016; Pistella et al., 2018; Salvati, Pistella, Giacomantonio, & Baiocco, 2018b), may reflect a culture in which traditional gender roles and homophobic attitudes still persist, while other regions of United States, where previous study was conducted, may provide more inclusive and supportive school environments for sexual minorities.

In such a stigmatizing environment, therefore, sexual minority males have a greater risk of being bullied due to their sexual identity or gender expression (Toomey & Russell, 2016), and may be more vulnerable to experiencing body dissatisfaction compared to heterosexual males (Feldman & Meyer, 2007): These factors may be associated with the onset and persistence of UWCB, as previously reported. Finally, the association between cyberbullying and UWCB was significant after accounting for the interaction between gender and sexual identity. This result indicates that although bullying experiences may be especially detrimental to UWCB for sexual minority males, cyberbullying is associated with UWCB regardless of sexual orientation and gender. The widespread use of internet

has made sharing pictures in diverse social networks a normative feature of the online experience for youth, which may expose them to online criticisms about their appearance (Calvete, Orue, & Gámez-Guadix, 2016) with associated negative consequences for body image and weight-related behaviors.

3.4 Limitations of the Studies and Future Research

We should mention some limitations of the *study 4*. This research was based on a convenience sample that may limit the generalizability of the results. Another limitation is related to the use of self-reporting instruments that may be influenced by social desirability. Moreover, the retrospective nature of the study and small sample size may mean the results are not necessarily a true representation of the population. Finally, bullying measures were detected by a single item; Huang and Cornell (2016) showed that use of a general item about bullying produces an underestimate of the bullying rates in comparison to use of more specific items about the different forms of bullying (such as exposure to teasing, verbal abuse, insulting remarks, or social exclusion). However, in this *study*, these single-item measures on bullying were used to guide the exploration of the phenomena in Italian sports-related contexts with a quantitative method since the majority of the research on these issues used a qualitative approach (Anderson, 2009b, 2011b; Anderson et al., 2016; Cleland et al., 2016; McCormack, 2012; Melton & Cunningham, 2014; Mishna et al., 2008; Shannon, 2013; Zipp, 2011). Recently, a scale was developed for assessing homophobic bullying (Prati, 2012) validated in Italian contexts, but this measure was used in school contexts and with adolescent participants. Future research should include measures designed to evaluate bullying and homophobic bullying with adapted scales in Italian sports-related contexts.

Replication of this research using only athlete groups with different gender and sexual orientations may offer another possibility for further research. Again, we did not

include bisexual/pansexual men, although several studies reported that negative attitudes toward bisexuals are more prevalent than negative attitudes toward gay men (Eliason, 1997; Pistella et al., 2016), while other research found a decrease in negative attitudes toward them (Anderson & McCormack, 2016). However, bisexual/pansexual people are difficult to recruit, and this research was designed to assess the specific phenomenon of bullying and homophobic bullying in gay men in comparison to heterosexual men. So, future research should include bisexual/pansexual people in the sample to enable an analysis of differences between gay, heterosexuals, pansexual and bisexual people in the rates of bullying and homophobic bullying, which, to our knowledge, no study has yet done with quantitative research.

Further investigation could also examine the role of fans and bystanders in promoting or discouraging homophobic bullying episodes or heteronormative sporting climate (Cashmore & Cleland, 2012). Future studies could also use a more representative sample of the whole sexual minorities by involving women too, in order to analyze even differences of bullying between lesbians and gay men. In fact, the sport environment is even hostile toward lesbian athletes (Symons, O'Sullivan, & Polman, 2016); future research on lesbian athletes should include different variables, such as sexism (Pistella et al., 2018), heterosexism (Szymanski et al., 2008) or the pressures and risks associated with "hegemonic femininity" (Krane, 2001; Roth & Basow, 2004), and should be further investigated in relation to the different ways in which they experience explicit homophobia compared to gay athletes in sports-related contexts (Griffin, 1993).

Moreover, also the *study 5* had some limitations. First, self-report instruments and no measures of social desirability were used. Second, all measures were assessed by single items. Third, the YRBS did not consider other variables that might have an effect on

UWCB, such as body dissatisfaction, homophobia, sexism, or being bullied due to be overweight. Fourth, replication of this research in larger samples is needed.

Finally, the *study* was limited to one U.S. state. Further, Texas may be a state that is socially and politically conservative, where negative attitudes toward sexual minorities are still rife compared to other regions of the United States. Furthermore, future research should consider the socioeconomic status, which was not present on the Texas YRBS. Although the literature suggested the strong relation between body dissatisfaction and other individual characteristics to explaining the higher prevalence of UWCB in sexual minority males, future research should investigate in more detail the role of bullying, and social support in predicting such negative outcomes. Indeed, the present *study* suggests that schools should develop stronger anti-bullying policies to reduce peer victimization and UWCB among at-risk youths, especially in more socially conservative settings.

Chapter 4. Weight-related health behaviors for transgender youth

4.1 Study 6. The role of school safety on healthy behaviors

The paper summarizing this research was submitted in:

Pistella, J., Ioverno, S., Rodgers, M., Baiocco, R., Russell, S. T. (*Submitted*). The contribution of school safety on weight-related health behaviors for transgender youth. *Appetite*[2].

This *study* was conducted during my visiting scholar period at the University of Texas at Austin (USA). Despite the large number of studies that have investigated the relationship between feeling of safety and unhealthy behaviors in youth, to our knowledge, no previous studies have focused specifically on weight-related health behaviors and conditions among transgender students, and no research has considered the role of school safety on weight-related health behaviors. The current *study* aimed to explore the relationship between perception of school safety, gender identity, weight-related health behaviors (i.e. participation in physical education at school and physical activities outside of school), and healthy and unhealthy eating habits

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Specifically, we aimed to examine if a low perception of safety at school increases the risk of such unhealthy behaviors and to highlight the necessity of policy interventions regarding school safety for transgender youth. In fact, the literature indicated that gender minorities are a population at risk to develop negative psychosocial consequences (Conron et al., 2012; Coulter et al., 2017; Scandurra et al., 2018) because they reported less familial social support, greater peer victimization and harassment during adolescence than their non-transgender counterparts (Muchicko et al., 2014).

Based on existing studies (chapter 1, pp. 24–29), we proposed the following hypotheses: We expected that (Hypothesis 1) transgender students will have lower levels of physical activity outside and inside of school than non-transgender students (Jones et al., 2017). We also expected that (Hypothesis 2) school safety will be associated with positive weight-related health behaviors (more physical activity and healthy eating habits, and fewer unhealthy eating habits; Libbey et al., 2008; Lunde et al., 2006). As a result of possibly compromised school safety and greater body consciousness, we expected that (Hypothesis 3) the association between school safety and weight-related health behaviors will be stronger in transgender students than non-transgender participants. Prior studies find no differences for transgender adults in healthy or unhealthy eating behaviors; we explore these factors in a sample of transgender youth.

4.1.1 Method

Procedures and participants

We analyzed data from the 2013–2015 California Healthy Kids Survey (CHKS), a survey designed to explore youth health and risk behaviors among middle and high school students in California schools. The CHKS was developed by WestEd for the California Department of Education (Austin, Bates, & Duerr, 2015a; see (see http://chks.wested.org), and the survey was administered by school staff following detailed instructions provided

by them. Written informed consent was obtained from the parents of the participating students. Participants were assured of anonymity and confidentiality and were given the option not to participate in the research.

The initial sample included a total of 910,885 students from 2,641 middle and high schools. Based on the recommendation of WestEd, this study excludes respondents who are systematically identified as have questionable responses. Exclusion is based on meeting two or more criteria related to inconsistent responses (e.g., responding that they never used a drug, but reporting drug use in the past 30 days), exaggerated drug use, using a fake drug, and indicating that they answered dishonestly to all or most of the questions on the survey (i.e., "how many questions in this survey did you answer honestly") (Austin, Bates, & Duerr, 2015b). Based on these criteria, 1.72% of students are coded as mischievous responders and are not included in these analyses.

The CHKS is comprised of a Core Module administered to all schools (n = 2,641) that contains questions about demographic characteristics and school safety, as well as several optional modules. In the present study, we used a supplemental module on "Physical Health and Nutrition Module" (PHMN) that includes information on physical activity and healthy and unhealthy eating habits. The PHMN was administered in 6.4% of schools: The analytic sample consisted of 31,609 students (n = 15, 750, 49.8% females; n = 309, 1% students did not reveal their gender). The number of students per school ranged from 1 to 1,3106 participants. They self-identified as heterosexual (n = 30,185, 95.5%), lesbian, gay, or bisexual (n = 1,424, 4.5%); 358 were transgender (1.1%). Ages ranged from 10 or younger to 18 or older (M_{age} = 14.04, SD = 1.70). In terms of racial identity, 28.6% of the students reported they were White, 21.2% Asian, 4.2% Black/African American, 2.2% Native Hawaiian or Pacific Islander, 2.3% American Indian/Alaskan Native, and 31.0% multi-racial; 10% did not identify their race.

Measures

Student and school indicators. Participants completed an identifying form to collect data related to student-level characteristics such as age, gender, gender identity, sexual orientation, and race. We controlled for several demographic indicators at the school level: School socioeconomic status was determined through the proportion of students eligible for free or reduced-price meal (FRPM), while the schools' urbanicity status was assessed by indicator for urban or rural locations. Specifically, based on the 2010 census schools were categorized as: 1) Urbanized Area of 50,000 or more people (UA), 2) Urban Clusters of at least 2,500 and less than 50,000 people (UC), and 3) Rural are all other zip codes not included as an urban area. We also included information about school enrollment.

Feeling safe. School safety scale was calculated as the mean of two items: "I feel safe in my school" (ranging from 1 = *totally disagree* to 7 = *totally agree*) and "How safe do you feel when you are at school?" (ranging from 1 = *very safe* to 7 = *very unsafe*). The second item was recoded so that a higher score indicated greater feeling safe at school. The correlation between these two items was high, $r = .72$. This same type of scale was used in previous research (Moore, Benbenishty, Astor, & Rice, 2017).

Physical activity. A measure of physical activity (Austin, Polik, Hanson, & Zheng, 2016) comprised three items assessing the number of days students had engaged vigorous and moderate physical activity, or muscle strengthening and toning exercise during the past 7 days. Specifically, students were asked how often they (1) "exercise or do a physical activity for at least 20 minutes that made you sweat and breathe hard? (For example, basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities)"; (2) "participate in a physical activity for at least 30 minutes that did not make you sweat and breathe hard? (For example, fast walking, slow bicycling, shooting baskets,

skating, raking leaves, or mopping floors.)"; (3) do exercises to strengthen or tone your muscles? (For example, push–ups, sit–ups, or weight lifting.)". A total score derived from the eight-point Likert-type scale ranged from 1 (0 days) to 8 (7 days). The three items were averaged to form a composite scale of physical activity, with higher values corresponding to greater levels of exercise. In the present study, the Cronbach's alpha is .79.

Physical education. Questions related to physical education instruction included the following: "in an average week, on how many days do you have physical activity in your physical education class?" (ranging from 1 = *0 days* to 5 = *5 days*) and "during an average physical education class, how many minutes do you spend actually exercising or playing sports?" (ranging from 1 = *I do not take physical education.*to 5 = *more than 30 minutes*). The total score of each participant was calculated as the mean of the 2 items, whereby a higher score indicated greater days and minutes of physical education. There was a strong correlation between these two items (r = .78).

Healthy and unhealthy eating habits. The healthy eating habits included four items assessing the healthy eating behaviors of the students. Participants were asked to indicate whether they consumed the following food or beverage in the past 24 hours: vegetables, fruit, milk or yogurt, 100% fruit juice. An example item is "during the past 24 hours, how many times did you eat vegetables? (include salads and nonfried potatoes)". The unhealthy eating habits (UE) scale is a two-item measure designed to assess the consumption of unhealthy food, such as fried potatoes or soda pop drinks. An example item is "during the past 24 hours, how many times did you eat French fries, potato chips, or other fried potatoes?". The questions feature a six-point Likert-type scale ranging from 0 (*0*) to 5 (*5 or more*). The correlation between these two scales was moderate (r = .40). A higher score in healthy eating habits indicated greater healthy eating behaviors, while higher values in unhealthy eating habits corresponding to higher degrees of unhealthy

eating behaviors. The reliability for the healthy eating behaviors and unhealthy eating behaviors are .77 and .72, respectively.

4.1.2 Data Analysis

We used the Stata statistical software package (StataCorp, 2017; version 15) to conduct the analyses. The basic descriptive statistics of the measures differentiated by gender identity are displayed in Table 14. Gender identity differences (transgender *vs*. non-transgender students) were analyzed using the chi-squared test for categorical variables and analysis of variance (ANOVA) for continuous variables. Bivariate correlations were performed to test the relationships between variables. Multilevel regression models were conducted for each dependent variable using the *mixed* command. All models included student and school-level characteristics as controls. All dependent variables and continuous covariates were standardized prior to analysis. For continuous covariates, student-level variables (school safety and age) were group-mean centered, and school-level variables (percentage of students with free & reduced priced meals, and school enrollment) are grand mean centered. We also tested the interactive effects of gender identity and perceptions of school safety on the 4 different outcome variables. Simple slope analyses were performed using the margins command. Only significant interaction terms are reported.

Table 14. Descriptive (means, standard deviations, and percentages) of the sample's characteristics

	Transgender (*n* = 358)			Non-transgender (*n* = 31,251)			
	Total	Males	Females	Total	Males	Females	F/χ^2
Sexual orientation, *n* (%)							2600.00***
LGB	217 (60.6%)	131 (64.5%)	72 (35.5%)	1,207 (3.9%)	367 (30.9%)	820 (69.1%)	–
Heterosexual	141 (39.4%)	83 (62.4%)	50 (37.6%)	30,044 (96.1%)	14,969 (50.3%)	14,808 (49.7%)	–
Race, *n* (%)							22.89***
White	106 (31.4%)	64 (63.4%)	37 (36.6%)	8,939 (32.0%)	4,411 (49.6%)	4,476 (50.4%)	–
Asian	67 (19.8%)	38 (61.3%)	24 (38.7%)	6,634 (23.7%)	3,243 (49.2%)	3,352 (50.8%)	–
Black	30 (8.9%)	23 (76.7%)	7 (23.3%)	1,283 (4.6%)	643 (51.0%)	618 (49.0%)	–
Hawaiian	11 (3.2%)	8 (72.73%)	3 (27.3%)	684 (2.4%)	337 (50.0%)	337 (50.0%)	–
American Indian	16 (4.7%)	9 (60.0%)	6 (40.0%)	723 (2.6%)	372 (53.3%)	326 (46.7%)	–
Multi-racial	108 (31.9%)	61 (60.4%)	40 (39.6%)	9,685 (34.6%)	4,738 (49.2%)	4,887 (50.8%)	–
Age, *M* (SD)	14.43 (1.75)	14.50 (1.68)	14.27 (1.89)	14.03 (1.69)	14.08 (1.70)	13.99 (1.68)	18.84***
School safety, *M* (SD)	3.32 (1.10)	3.27 (1.18)	3.42 (.95)	3.81 (.84)	3.81 (.87)	3.82 (.81)	112.91***
Physical activity, *M* (SD)	4.80 (2.58)	5.02 (2.66)	4.57 (2.41)	4.70 (2.10)	4.99 (2.13)	4.43 (2.02)	0.66
Physical education, *M* (SD)	3.49 (1.70)	3.45 (1.71)	3.65 (1.72)	4.13 (1.59)	4.19 (1.57)	4.08 (1.62)	48.71***
Healthy eating habits, *M* (SD)	3.12 (1.55)	3.27 (1.65)	2.94 (1.34)	2.94 (1.27)	3.08 (1.31)	2.81 (1.20)	6.08*
Unhealthy eating habits, *M* (SD)	2.58 (1.73)	2.73 (1.81)	2.31 (1.53)	1.99 (1.21)	2.13 (1.28)	1.85 (1.10)	78.09***

Note. *$p < .05$, ** $p < .01$, *** $p < .01$*. The column *$F/\chi 2$* refers to the gender identity difference (transgender *vs*. non-transgender).

4.1.3 Results

Gender Identity Differences and Correlations Among Variables

The majority of the transgender people were self-identified as LGBT+ (n = 217, 60.6%), while nearly all non-transgender people reported their sexual orientation as heterosexual (n = 30,044, 96.1%). Oneway ANOVA showed significant differences in students' feelings of safety at school, (F(1, 30917) = 18.84, p < .01); transgender students (M = 3.32, SD = 1.10) reported feeling less safe compared to non-transgender people (M = 3.81, SD = .84). Similar differences were found for physical education at school (F(1, 26956) = 48.71, p < .001) healthy eating habits, (F(1, 30) = 6.08, p = .01), and unhealthy eating habits, (F(1, 29959) = 78.09, p < .001). Non-transgender people were more likely to engage in physical education and were less likely to eat healthy and unhealthy food in comparison to transgender people. No significant difference was found between transgender and non-transgender people in physical activity outside school context (F(1,) = .66; p = .42). Mean and standard deviations are shown in Table 14.

Table 15 presents the correlations among the key variables. As expected, perception of school safety was positively associated with physical activity (outside and inside school), and healthy eating habits. Conversely, we found that school safety was negatively associated with unhealthy eating habits, regardless of gender identity.

Table 15. Pearson's *r* between Safety Scale and other variables for transgender (*n* = 358, below the diagonal) and non-transgender people (*n* = 31,251, above the diagonal)

	1	2	3	4	5	6
1. Age	1.00	–.06**	–.09**	–.51**	–.10**	.02*
2. Safety scale	.01	1.00	.03**	.02**	.03**	–.11**
3. Physical activity	–.13*	.01	1.00	.29**	.32**	.08**
4. Physical education class	–.41**	.03	.39**	1.00	.12**	.01
5. Healthy eating habits	–.04	.14*	.44*	.18**	1.00	.40**
6. Unhealthy eating habits	–.08**	–.10	.14*	–.02**	.51**	1.00

Note. ***p < .01, *p < .05.*

Exercise, Perceptions of School Safety and Gender Identity

Transgender students reported less physical education at school (β = −.25, $p <$ .001), but not differences in general physical activity (β= .10, p = .08). There was a positive association between perceptions of school safety and physical activity (β = .03, $p <$ .001) and physical education at school, (β = .03, $p <$ .001; see Table 16). We did not find a significant interaction effect between gender identity and safety at school for physical activity or education (Table 16 do not include interaction terms). With regard to covariates modeled for physical activity, all student and school characteristics were significant, except for Black, American Indian or Alaska Native, and Pacific Islander races, and a school urbanicity status. In addition, high levels of physical education were associated with younger age, (β = −.39, $p <$ .001), male gender, (β = −.09, $p <$ .001), Asian racial identity (β = −.07, $p <$ .001), and school enrollment (β =.13, $p <$ .001).

Table 16. Multilevel regression analyses for gender identity and perception of school safety predicting weight-related health behaviors.

	Physical Activity	Physical Education	Healthy Eating[a]	Unhealthy Eating
Final Models:	B (SE)	B (SE)	B (SE)	B (SE)
Fixed Effects				
Intercept	.44 (.10)***	.58 (.15)***	.15 (.07)*	–.01 (.08)
Transgender Identity	.10 (.06)	–.25 (.05)***	.18 (.06)**	.31 (.06)***
School safety	.03 (.01)***	.03 (.01)***	.02 (.01)***	–.09 (.01)***
Transgender identity X School safety	--	--	.11 (.05)*	--
Covariates (student-level characteristics)				
Age	–.10 (.01)***	–.39 (.01)***	–.05 (.01)***	.00 (.01)
Female	–.27 (.01)***	–.09 (.01)***	–.23 (.01)***	–.28 (.01) ***
LGB sexual orientation	–.17 (.03)***	–.05 (.03)	0 (.03)	.16 (.03)***
Race (White as reference category)				
American Indian/Alaskan Native	–.05 (.04)	–.05 (.04)	.13 (.04)***	.15 (.04)***
Asian	–.16 (.02)***	–.07 (.02)***	.16 (.02)***	–.07 (.02)***
Black/African American	.00 (.03)	–.05 (.03)	.18 (.03)***	.39 (.03)***
Native Hawaiian/Pacific Islander	.02 (.04)	–.03 (.04)	.10 (.04)*	.06 (.04)
Multi-racial	–.04 (.02)**	.02 (.01)	.07 (.02)***	.09 (.02)***
Covariates (school-level characteristics)				
Free / reduced price meals	–.06 (.02)***	.04 (.03)	–.03 (.01)**	.14 (.01)***
Urbanicity	–.05 (.05)	.00 (.07)	–.02 (.03)	.04 (.04)
Enrollment */1000*	.08 (.02)***	.13 (.03)***	.00 (.01)	.00 (.01)
School size[b]	26,341 (155)	23,534 (135)	25,669 (155)	25,795 (156)
Random Effects				
Intercept (School)	.03 (.00)*	.08 (.01)*	.01 (.00)*	.01 (.00)*
Residual (Student)	.93 (.01)*	.67 (.01)*	.96 (.01)*	.91 (.01)*

Note. * $p<.05$; ** $p<.01$; *** $p<.001$. All continuous variables were standardized to z-scores prior to analysis, results are presented as standardized estimates and standard errors. [a] model includes a fixed effect level-2 interaction between gender identity & school safety. [b] School size refers to the number of students enrolled in a school (number of schools is in parentheses); school sizes for models vary from the total sample size because of missing data.

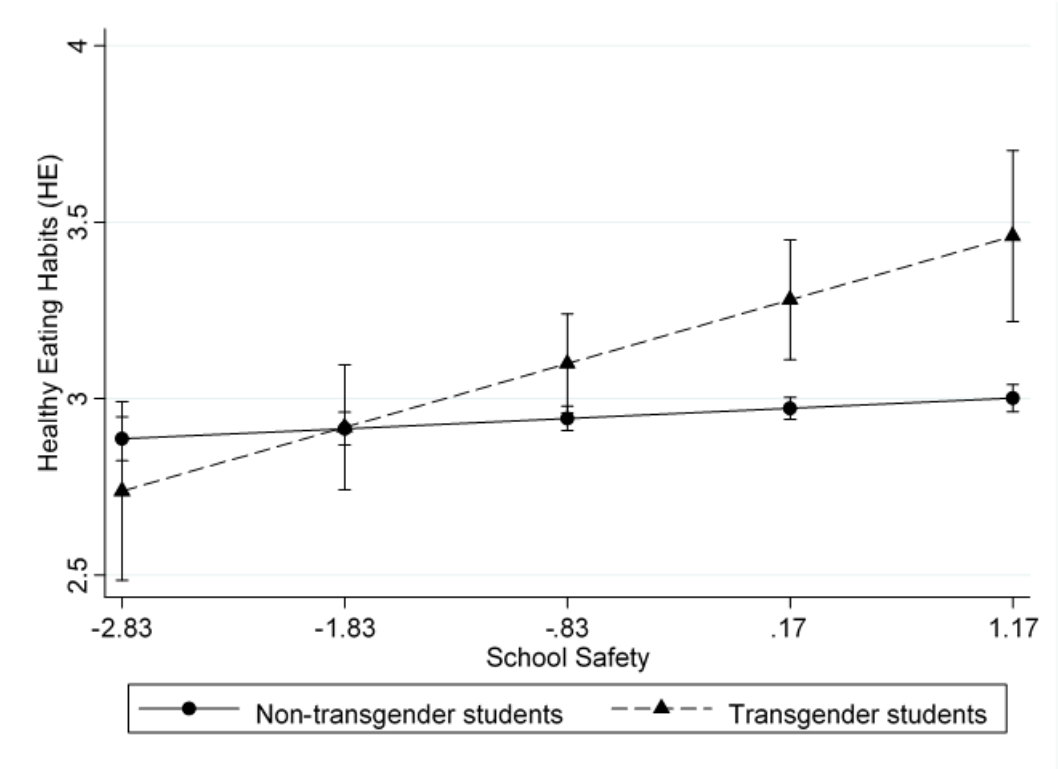
Eating Habits, Perceptions of School Safety and Gender Identity

The analysis of the sample revealed that higher scores for healthy eating (β = .02, *p* = .001) were associated with higher scores of school safety, and transgender students reported more healthy eating (β = .18, *p* = .007). Additionally, students who were younger (β = −.05, *p* < .001), male (β = −.23, *p* < .001), and non-White reported less healthy eating, and healthy eating was less common in schools with more students who received free and reduce-priced meals (β = −.03, *p* = .005; see Table 16).

The two-way interaction between gender identity and perceptions of safe school was significantly related to healthy eating habits, (*B* = .15, *p* = .004). When the levels of safety were high, students were significantly more likely to report more healthy eating than when the school safety was perceived as low. The simple slopes for transgender (*B* = .18, *p* = .001), and non-transgender students (*B* = .03, *p* = .003) were both positive and significantly differed from zero, indicating that there were no significant gender identity differences in healthy eating habits (Figure 5) when the global level of school safety as perceived by students was low. In contrast, transgender students reported more healthy eating when the levels of school safety were high compared to non-transgender students.

Figure 5.

Interaction effect between school safety and gender identity on healthy eating habits



Considering unhealthy eating habits, a higher score (β = −.09, $p < .001$) was associated with lower scores of school safety, and transgender students were more likely to report unhealthy eating habits (β = .31, $p = .001$). Male students (β = −.28, $p < .001$) showed less unhealthy eating, and LGBT+ students (β = .16, $p < .001$) reported more unhealthy eating; Asian students reported less unhealthy eating, whereas all other non-White groups except Native Hawaiian/Pacific Islander reported more unhealthy eating. Finally, unhealthy eating was more common in schools where more students received free or reduce-priced meals (β = .14, $p < .001$). Finally, the two-way interaction between gender identity and perceptions of safe school was not significantly related to unhealthy eating (this interaction is not included in Table 16).

4.2 General Discussion

The aim of this *sixth study* was to contribute to the extension of knowledge about the relationship between school safety and different kinds of weight-related health behaviors in a representative sample of transgender and non-transgender students. In addition, despite the fact that transgender people are a stigmatized minority (Scandurra et al., 2017) and they are at high risk for poor mental health (Conron et al., 2012; Fredriksen-Goldsen et al., 2013) and psychological distress (Meyer, Schwartz, & Frost, 2008), few studies have examined maladaptive behaviors (VanKim et al., 2014) and the potential role of school climate (McGuire et al., 2010; Toomey et al., 2012) in this population, and no previous research, to our knowledge, have analyzed these variables within the same study. Consistent with prior research, we find differences in weight-related behaviors for transgender students, and that transgender students in our sample reported feeling less safe at school than non-transgender youth (Coulter et al., 2017; Grossman et al., 2009; Toomey et al., 2010; Toomey et al., 2012).

Our first hypothesis was that transgender students would be less likely to engage in physical activity and physical education compared to non-transgender students. Our findings partially confirmed our expectations showing that transgender students engage less in physical education at school, but not in less physical activity. Previous studies report that transgender people of different ages engaged in less physical activity (Gorczynski & Brittain, 2016; Muchicko et al., 2014; Shankle, 2013; VanKim et al., 2014). However, studies of transgender youth show that they report avoiding gym or physical education classes more frequently compared to their non-transgender counterparts (Kosciw et al., 2016). Transgender students may be more likely to perceive school physical activity and sports contexts as hostile: Sports activities tend to be gender segregated, and often transgender students are not allowed to use bathrooms or locker rooms aligned with their gender (Kosciw et al., 2016). Yet, given that transgender youth may be more conscious of

or attuned to their bodies, the finding of no difference for physical activity may indicate that transgender youth are equally likely to seek opportunities outside school to engage in regular physical activity, without fear of being teased, discriminated or bullied (Elling, De Knop, & Knoppers, 2003; Pronger, 1990; van Ingen, 2011), which is common in schools.

Transgender students in our sample reported higher levels of healthy as well as unhealthy eating habits than non-transgender participants. These findings were not consistent with the results reported by VanKim and colleagues (2014), which found no disparities between these two groups in food and drink consumption. However, VanKim and colleagues' study used a small sample of transgender (n = 53), and there are no other studies on this topic in transgender people. However, other research has found disparities between transgender and non-transgender people in the incidence of underweight as well as overweight (Conron et al., 2012; Fredriksen-Goldsen et al., 2013; VanKim et al., 2014).

Our finding that both healthy weight behaviors and well as unhealthy weight behaviors are more common among transgender youth is consistent with this finding regarding actual differences in both the likelihood of being both under- as well as over-weight. Moreover, body dissatisfaction could explain the higher prevalence of both healthy and unhealthy food/drinks consumption in our transgender sample. The literature reported that transgender people were more likely to be dissatisfied with their bodies (Jones et al., 2016; Witcomb et al., 2015), which is linked to high prevalence of eating difficulties (Ålgars, Alanko, Santtila, & Sandnabba, 2012; Becker et al., 2016), and high rates of underweight or overweight status. Indeed, transgender people might use unhealthy eating behaviors as a strategy to modify their body, trying to reduce or increase their weight in order to suppress the secondary sexual characteristics (Vocks et al., 2009), and accentuate features of their desired gender.

Our second hypothesis was that, regardless of participants' gender identity, school safety is associated with healthy weight-related behaviors. Our results confirmed our expectations: Feelings of safety were significantly associated with all weight-related health behaviors, both in transgender and in non-transgender participants. This is consistent with the findings of previous research (Kosciw et al., 2016; Libbey et al., 2008; Lunde et al., 2006) showing that students who fear for their safety may engage in maladaptive or unhealthy behaviors more frequently compared to students who feel safe. Moreover, this is in line with previous studies that found a strong association between unhealthy eating and emotional symptoms caused by feeling unsafe (Halvarsson-Edlund et al., 2008; Libbey et al., 2008). Our findings suggest that a school safety might support the students to acquire important skills for healthy eating and regular physical activity regardless of gender identity. Indeed, school context has been recognized as an important setting where interventions can occur to increase healthy behaviors, such as programs to support healthy eating and physical activity (Haines & Neumark-Sztainer, 2006; Levine & Smolak, 2005; Story et al., 2009).

The results of multilevel regression showed that age, sex, race, and sexual orientation, at student level, as well as FRPM and the number of students enrolled at school level, are important predictors of weight-related health behaviors. Contrary to previous research (Mehta et al., 2013), we found that physical activity and physical education were higher in large schools compared to small schools. A possible explanation is that most of schools in our study might have offered not only competitive sports, but also such activities as intramural sports or non-competitive exercise opportunities for all students (IOM, 2011). These results suggest the need to consider both external influences and background characteristics in seeking to analyze weight-related health behaviors.

Our third hypothesis was that the perception of school safety would have a stronger effect on healthy weight-related behaviors in transgender students than non-transgender participants. We found that the interaction between perceived school safety and gender identity was significant only for healthy eating habits. Specifically, our results showed that when the school context is not perceived as a safe space, there were no differences in healthy eating habits between transgender and non-transgender students; differences were significant, however, when the school was perceived as safe. This finding is not consistent with our hypothesis; however, it is consistent in many ways with the argument that transgender students may be more self-conscious about their bodies (Jones et al., 2016; Vocks et al., 2009; Witcomb et al., 2015), and thus about weight-related behaviors. Our hypothesis was guided by a risk-focused frame on the health of transgender youth; we acknowledge that we were predisposed to consider their vulnerability, rather than their unique strengths. Instead, our finding suggests that, consistent with the notion that they may be more conscious about their bodies, in safe school settings transgender youth appear to make healthier choices about their diets.

4.3 Limitations of the Study and Future Research

We should mention some limitations of the *sixth study*. The first limitation is the cross-sectional nature of the data collection; thus, it is not possible to provide evidence for causal associations. Future research should examine these relationships longitudinally. Second, this *study* was geographically restricted to the state of California and this may limit the generalizability of the results. Moreover, school safety measures were measured with two items, without asking students the reasons for perceived safety. Further examination is needed on specific motivations. Future studies are needed to test the role of other moderators in order to more fully understand relations between perception of school

safety, weight-related health behaviors and gender identity, such as body dissatisfaction, body weight, discrimination or negative sport/school climate.

Since the survey did not include separate measures of sex assigned at birth, this research does not lead to inferences concerning whether there are significant differences between female-to-male and male-to-female transgender people. Further research should assess gender identity with a method to cross-classify sex assigned at birth and gender identity status. In addition, further investigation could also examine sexual orientation of either group (i.e. transgender and non-transgender people) and analyze possible differences in weight-related health behaviors based on sex assigned at birth, gender identity and sexual orientation. So, future studies should examine in transgender youth the levels of body dissatisfaction, internalized transphobia and how the absence or presence of school policies and practices focused on sexual orientation and gender identity (SOGI-focused policies) may affect their weight-related health behaviors, and at the same time, their perceptions of school safety.

Conclusions

The scientific literature on homophobia and victimization in sports is increasing rapidly in the last decades. The whole thesis represents an attempt to extend knowledge about experiences of lesbian and gay people within sports-related contexts, showing that several forms of sexual prejudice still persist also in the same lesbian and gay athletes, resulting in difficulties to come out or in high levels of internalized sexual stigma. Additionally, this research highlight that some sport environments have been are a particularly problematic setting with remarkable homophobic behaviors. This is especially true for the health and well-being of sexual minorities, who tend to be an 'at-risk' group due to prejudice and discrimination suffered. Finally, as far as we know, no previous work has investigated transgender students' engagement in weight-related behaviors and the influence of school-level factors, highlighting a gap in the literature and a relatively new area of research.

The *first two studies* described the process of development and validation of the SPSS, given that the need to use appropriate instruments to assess the change process in the level of homophobia in sports had become evident. Successively, the *third study* used the SPSS and was conducted given that, to our knowledge, no empirical studies on coming-out in sports have investigated the role of coming-out to family members and internalized sexual stigma in a sample of sexual minorities. Results showed that although coming-out to family members resulted a significant predictor of coming-out in sports-related contexts, the strength of this relationship was reduced when considering the effect of internalized prejudice. The internalized sexual stigma in sports and limitations in the disclosure of one's sexual identity could have negative consequences on lesbian and gay athletes' well-being and sport careers, by influencing their choice, involvement and attendance in sport activities (Hekma, 1998). Sports environments are usually

characterized by an important invisibility of sexual minorities, that cannot be considered as neutral.

These mechanisms are strongly connected to the central issue of our research, which is the denial of visibility of lesbian and gay identities within the sporting environment. The "*don't ask don't tell"* attitude that typically characterize western societies such as Italy (Lingiardi et al., 2016), is defined as modern form of sexual prejudice, whose more subtle characteristics are usually harder to identify and deconstruct. At the same time, as seen, this subtle form of prejudice is not less dangerous compared to the open form, in terms of several consequences.

The *fourth study* focused on bullying and homophobic bullying in sports-related contexts. The results showed that gay men reported more frequent bullying and homophobic bullying than heterosexual men. Gay men reported dropping out of sports more frequently, namely due to a fear of being bullied and greater familial pressure to conform to masculine-type sports. The implications of the study concern not only the health of people who identify as a sexual minority but also the well-being of young people who self-identify as heterosexual yet are perceived as LGBT+, in addition to those who deviate from the traditional roles imposed by society (Ryan & Rivers, 2003).

Results of the *fifth study* showed that unhealthy weight control behaviors were associated with older age, being overweight, lack of support from adults, low physical activity and cyberbullying. A significant three-way interaction between gender, sexual identity and bullying showed that bullying was associated with high levels of unhealthy weight control behaviors among sexual minority males. Thus, in terms of practical implications, the *fourth and fifth studies* suggests that sport organizations and school settings should target their bullying-intervention on all sports-related contexts (Ahuja et al., 2015).

Indeed, early intervention in these environments may help prevent young people from being discouraged to participate in sports due to a fear of being bullied. It could be useful to develop programs that would combat homophobia in sports (e.g. through training, counseling, and public service announcements), or promote various events such as the Rainbow Laces campaign in support to LGBT+ rights (Anderson et al., 2016), as well as to run a series of sensitization campaigns and educational programmes in sports-related contexts (Krane, Barber, & McClung, 2002).

Additionally, the focus should be on protective factors in order to support and prevent young people from dropping out of sport (Baldry & Farrington, 2005). For instance, coaches outside and inside school contexts may provide a supportive and positive environment, which partially protects the athletes or students from the psychological effects of such unsupportive environments and may reduce the risk of dropping out of sport (Tomlinson & Yorganci, 1997). Likewise, data confirmed that school and sports-related contexts should include anti-bullying policies to prevent victimization based on gender non-conformity and LGBT+ status (Cohn & Leake, 2012; Earnshaw et al., 2018). It is then important to create a sports context in which bullying and homophobic bullying are non-normative (Sentse, Scholte, Salmivalli, & Voeten, 2007). Finally, we have highlighted the need of a policy network regarding sport safety in Italy, as has happened in other countries (Binkhorst & Kingma, 2012; Russell & Horn, 2016), and policy initiatives aimed at promoting psychosocial risk management caused by bullying (Iavicoli et al., 2014).

Maladaptive behaviors, such as unhealthy weight control behaviors, are a public health problem. Only recent studies considered sexual orientation or gender identity disparities and associated variables of unhealthy weight control behaviors. This *fifth study* is one of the first to provide evidence that peer victimization may negatively influence health behaviors, particularly among sexual minority adolescents. Our *study* highlights a

need for further study of the unique contributors to sexual minority health, as well as the importance of efforts to create safe and equitable schools and communities for all students.

Regarding the *sixth study*, it is now well-known that disparities exist between transgender and non-transgender student experiences (Brittain & Dinger, 2017; Cohen & Cribbs, 2017; Gorczynski & Brittain, 2016; Miller & Luk, 2018), and that the school environment has an important role in influencing healthy weight-related behaviors (Haines & Neumark-Sztainer, 2006; Levine & Smolak, 2005; Story et al., 2009). Findings suggested that when the school context is not perceived as a safe space, there were no differences in healthy eating habits between transgender and non-transgender students; differences were significant, however, when the school was perceived as safe. Overall, our results show that interventions are still needed at the school level to reduce weight-related health behavior disparities between transgender and non-transgender youth, especially with regards to physical activity at school and healthy and unhealthy eating. For example, despite the fact that physical activity is an important determinant of health and represents a public health issue that has received increasing attention in recent years, few studies have investigated the relationship between an active lifestyle and gender identity (Herrick & Duncan, 2017; Jones et al., 2017).

Interventions on weight-related health behaviors should include strategies that affirm and support the complexity of gender identities and expressions, because transgender individuals face unique difficulties associated with their gender non-conforming status. For example, the implementation of safe gender-neutral restroom (change door signs in lockable unisex restrooms) or the creation of individual showers or private changing rooms could make locker rooms and bathrooms safe for transgender students. Such interventions toward a more inclusive environment could encourages transgender students to maintain a healthy weight-related behavior.

Conclusions

Training teachers, administrators and school staff in regard sexual orientation and gender identity (SOGI) issues in schools or SOGI-related rights, but also the presence of safe school policies and supportive school personnel, may improve the feeling of safety for gender minorities but also for all students. School policies and practices focused on SOGI issues reduce discrimination based on sexual/gender identity and promote school safety with a more inclusive school environment (Greytak, Kosciw, & Boesen, 2013; McGuire et al., 2010). Indeed, students with SOGI-focused policies in their school report more positive school climates, a higher sense of connectedness to school and more supportive relationships with teachers. Therefore, the development and diffusion of SOGI-focused policies in all education systems would provide to all students a safe and welcoming educational environment regardless their sexual or gender identity. Given the importance of school safety among transgender students in the present *study*, it could be useful to develop a series of sensitization campaigns and educational programs at the school level that would combat negative attitudes based on gender identity or gender non-conforming status.

In conclusion, our results seem to suggest that the Italy is still a country where sexual minorities face serious social inequalities in sports-related contexts and the decline of homophobia seems less evident compared to other Western countries (*first four studies*). In addition, we found that other conservative countries, such as the Texas state, may reflect a culture in which homophobic attitudes still persist (*study 5*). Finally, our studies (*study 5* and *6*) confirmed some disparities in healthy behaviors (such as physical activity or healthy eating habits) for LGBT+ students compared to heterosexual counterparts.

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APPENDIX

Sexual Prejudice in Sport Scale (SPSS)

We are going to ask you a series of questions about your attitudes toward lesbian and gay (LG) athletes or coaches. There are no right or wrong answers, only opinions. Please indicate the extent to which you agree with each of the following statements by using the following scale:

1	2	3	4	5	6	7
Strongly Disagree	**Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**

1. I believe LG athletes should not openly declare their sexual orientation, even if they want to (DV)

2. LG persons should not be allowed to be trainers (OR)

3. Lesbian women are more likely to become leaders than heterosexual women (GP)

4. Those who support LG athletes should be isolated (OR)

5. Gay men are less likely to become leaders than heterosexual men (GP)

6. Sexual orientation of LG athletes is a private matter that should not be discussed (DV)

7. I believe that the presence of LG athletes may adversely affect the image of the sports clubs (OR)

8. Gay men are less competitive than heterosexual men (GP)

9. I'd feel uncomfortable to engage in sports with a gay man/a lesbian woman. (OR)

10. I'd feel uncomfortable if LG athletes talked about their sexual orientation openly (DV)

11. Lesbian women are less suitable for those sports, such as skating, that are more suited to girls (GP)

12. LG athletes should be treated as second-class people (OR)

13. Gay men are not as good as heterosexual men at sports (GP)

14. LG athletes understood that it is better to conceal their sexual orientation (DV)

15. Lesbian women are more skilled in sports than heterosexual women (GP)

16. LG athletes who reveal their sexual orientation should be expelled from sports clubs (OR)

17. Gay men could not be strong in a combat sport (GP)

18. LG athletes should be treated negatively because of their sexual orientation (OR)

19. [In my sports clubs] there may be LG athletes, but I don't need to know who they are (DV)

Note. Open-rejection (OR); denial of visibility (DV); gendering performance (GP); lesbian and gay (LG). Items are randomized. Subscale scores are computed by averaging subscale item ratings: OR (1, 2, 4, 7, 9, 12, 16, 18), DV (1, 6, 10, 14, 19), GP (3, 5, 8, 11, 13, 15, 17).