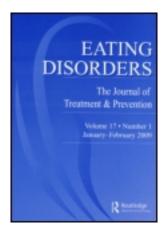
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A Group Intervention to Improve Body Image Satisfaction and Dietary Habits in Gay and Bisexual Men Living With HIV/AIDS

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A healthy diet is essential to maintaining a strong immune system for people living with HIV and AIDS. Prior studies have shown that HIV-positive gay and bisexual men are more susceptible to poor body image, which can negatively impact dietary habits. Interventions that simultaneously address body image and nutrition are therefore critical for this population. This paper describes the curriculum for a 14-week group designed to improve body image satisfaction and dietary habits in gay and bisexual men living with HIV/AIDS.

The connection between physical health and body image is fundamental, because how we feel about our bodies affects how we will ultimately treat our bodies—particularly in what we choose to eat. Prior studies have found that there is a relationship between body image dissatisfaction and dietary restraint, overeating, overexercising, and the development of eating disorders (McFarland & Kaminski, 2009; Olivardia, Pope, Borowiecki, & Cohane, 2004). These types of behaviors could be particularly detrimental to someone living with HIV/AIDS, for whom healthy dietary habits are critical in maintaining a strong immune system. Indeed, there is evidence that dietary habits and nutritional status impact viral load, CD4 counts, and mortality in people living with HIV/AIDS. (Baum et al., 1997; Chlebowski, Grosvenor, Bernhard, Morales, & Bulcavage, 1989; Coodley,

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Coodley, Nelson, & Loveless, 1993; Fields-Gardner & Fergusson, 2004; Guenter et al., 1993; Hendricks, Mwamburi, Newby, & Wanke, 2008).

A common side effect of the first generation medications (e.g., stavudine, zidovudine) used in highly active antiretroviral treatment (HAART) regimens was lipodystrophy, a syndrome that involves changes in body shape and composition. Lipodystrophy syndrome includes lipoatrophy, or peripheral fat loss in the arms, legs, face, and buttocks and lipohypertrophy, or fat accumulation in the abdomen, breasts, and neck (Carr et al., 1998). Although lipodystrophy is an increasingly less common side effect of the newer medications used in contemporary HAART regimens, there is evidence that body shape changes are still a problem for people living with HIV/AIDS. Cabrero, Griffa, and Burgos (2010) found that 55% of 965 patients treated with HAART perceived that they had suffered changes in body shape since they started treatment. Although some individuals who switch from older to newer medications can recover from HAART-related lipodystrophy, this is not always possible. Grunfeld et al. (2010) found that HIV-associated lipoatrophy persisted after 5 years of follow-up even among participants who discontinued medications associated with fat loss.

The changes in body shape and composition that are associated with lipodystrophy can impact body image. HIV-infected individuals with HAART-related lipodystrophy are significantly more likely than HIV-infected individuals without HAART-related lipodystrophy to report body image dissatisfaction (Burgyone et al., 2005; Guaraldi et al., 2006; 2008; Huang et al., 2006; Marin et al., 2006; Sharma et al., 2007).

Among people living with HIV/AIDS, gay and bisexual men may be at a particularly high risk for experiencing body image dissatisfaction. With few exceptions, studies have found that gay and bisexual men are significantly more likely to have eating disorders (Feldman & Meyer, 2007) and higher rates of dissatisfaction with their bodies (Morrison, Morrison, & Sager, 2004) compared to heterosexual men. Blashill and Vander Wal (2011) found that gay men with an AIDS diagnosis reported feeling unfit, out of shape, and in worse health compared to HIV-positive and HIV-negative gay men.

Gay and bisexual men living with HIV/AIDS are often a stigmatized subpopulation of the gay community, in which body image—particularly the pressure to maintain a lean and muscular frame—is often a priority (Siever, 1994). Body shape changes can be particularly distressing for gay and bisexual men living with HIV/AIDS in that they may perceive that their bodies no longer conform to an ideal lean or muscular body type (Kelly, Langdon, & Serpell, 2009). Further, people living with HIV/AIDS may engage in harmful behaviors, including taking steroids (Halkitis, Green, & Wilton, 2004), poor dietary habits (Kelly et al., 2009; Reynolds, Neidig, Wu, Gifford, & Holmes, 2006; Tate & George, 2001), and HAART nonadherence (Ammassari et al., 2002; Duran et al., 2001; Power, Tate, McGill, & Taylor, 2003; Reynolds et al., 2006; Santos et al., 2005) in an attempt to control body changes.

Previous interventions integrating both nutrition and mental health components have focused on increasing stress management and coping skills (Kaiser & Donegan, 1996; Reid & Courtney, 2007; Segal-Isaacson et al., 2006), however, to our knowledge, there are no interventions that have addressed body image and nutrition simultaneously. This is a significant gap, particularly since body image dissatisfaction has the potential to negatively impact the adoption and maintenance of healthy nutrition habits.

We developed a 14-session group for gay and bisexual men living with HIV/AIDS who are experiencing body image dissatisfaction. The goals of this group were: a) to increase body image satisfaction and acceptance and; b) to improve dietary habits. The article describes the empirical foundation and structure of the intervention, in addition to the content of each of the 14 sessions.

INTERVENTION

Group Member Recruitment

The eligibility criteria for participating in this group were: a) identifying as gay or bisexual; b) being HIV-positive and; c) reporting any degree of body image dissatisfaction. The Eating Attitudes Test (Garner, Olmstead, Bohr, & Garfinkel, 1982) was used in screening potential group members to identify individuals with clinically significant eating disorder symptoms (a score of 20 or higher). These individuals were further evaluated and connected with the appropriate mental health and medical services.

Group Curriculum

Group sessions were developed using the following interventions that have established effectiveness in improving body image satisfaction and dietary habits.

Nutrition counseling. Nutrition education sessions provided the group with concrete information about what constitutes a healthy diet and how to improve dietary habits. Research has found that psychoeducation groups are effective in reducing maladaptive dietary habits and improving body image (O'Brien & LeBow, 2007; Stice, Orjada, & Tristan, 2006). Studies have also found that nutrition counseling is an effective intervention in improving the dietary habits of people living with HIV/AIDS (Klein et al., 1997; McKinley, Goodman-Block, Lesser, & Salbe, 1994; Rabeneck et al., 1998; Segal-Isaacson et al., 2006).

Media literacy. Media literacy teaches individuals to critically evaluate media messages (e.g., product advertisements) to reduce their credibility and consequently, their influence on body image (Irving & Berel, 2005). Studies have found that media literacy interventions are effective in decreasing body

comparisons with media images and preventing media-induced body image dissatisfaction (Posavac, Posavac, & Weigel, 2001; Watson & Vaughn, 2006; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005).

Media literacy is a particularly important element to include in this intervention because representations of the male body, particularly in gay media, reinforce the often high standards around appearance in the gay community (Saucier & Caron, 2008). In a recent study, gay men reported feeling more pressured by the media regarding physical appearance compared to heterosexual men. Further, perceptions of the media's influence on attitudes about body image significantly mediated the relationship between sexual orientation and the desire to be thinner as well as appearance-related anxiety (Carper, Negy, Tantleff-Dunn, 2010).

Cognitive dissonance. Sessions from *The Body Project* (2007) by Eric Stice and Katherine Presnell were used to improve body image satisfaction and acceptance among group members. *The Body Project* is a cognitive dissonance theory based intervention that was designed to reduce the pressure to conform to a thin body type, and consequently reduce the use of unhealthy weight control behaviors among adolescent girls. Cognitive dissonance theory proposes that people have a drive to reduce dissonance—or the uncomfortable feeling caused by holding two contradictory ideas—by altering attitudes, beliefs, and behaviors (Festinger, 1957). In *The Body Project*, participants are encouraged to question and critique the thin ideal through a series of exercises that are designed to produce cognitive dissonance, which is ultimately resolved by decreasing the intensity of the belief in the thin ideal. Stice and Presnell proposed that a resolution in cognitive dissonance would result in improved body image satisfaction.

In a large-scale efficacy trial, *The Body Project* participants showed significantly greater reductions in body image dissatisfaction and thin-ideal idealization compared to the control group participants (Stice, Shaw, Burton, & Wade, 2006). *The Body Project* has also been adapted and evaluated for other populations (e.g., college students). These evaluations have yielded intervention effects for body image dissatisfaction (Becker, Smith, & Ciao, 2005). Stice and Presnell (2007) suggested that the success experienced by other researchers who have adapted the intervention for different populations indicates that minor variations in the intervention do not impact its effectiveness.

Very few changes were required to adapt *The Body Project* for gay and bisexual men living with HIV/AIDS. In the original intervention, the focus is on the idealization of a thin body, which was referred to as the "thin ideal." We instead referred to the "lean/muscular ideal," based on the tendency of gay and bisexual men to idealize this body type. Other minor alterations included changing pronouns and cultural references in the exercises so that they would be more relevant to this population.

Group Facilitation

The group was facilitated by a social worker and a registered dietician, both of whom had experience working with people living with HIV/AIDS. While both leaders actively participated in each group, there were certain sessions for which either the social worker or the dietician assumed the primary responsibility for facilitation because of the knowledge needed to communicate the content. The social worker led Sessions 6, 12, and 13, and the dietician led Sessions 7 through 11. The other sessions were co-facilitated by the social worker and the dietician.

Homework

Group members were provided with a workbook that contained all of the homework assignments and handouts that would be used throughout the 14 group sessions. Each assignment was designed to help the group members prepare for the following week's session by asking them to reflect on a specific dimension of body image and/or nutrition. The group members were responsible for bringing their journals/workbooks to each session so they could share their reflections with the group. The facilitators encouraged the group members to share their reflections from the homework assignments during the discussion of the session content to communicate the value of their efforts to the work of the group.

Overview of the Group Curriculum

The content of the 14 sessions is described below, including the themes and issues that were discussed, and the homework that was assigned to prepare the group members for the next group session. Each session was approximately 90 minutes in duration.

SESSION 1: ORIENTATION

Materials. Materials included handouts describing the group's policies and procedures (e.g., dates of group sessions, location, attendance/cancelation policy, confidentiality).

Themes/issues. The orientation provided an opportunity to introduce the group to potential group members. The facilitators explained that the group was designed to help HIV-positive gay and bisexual men feel better about their bodies and ultimately, take better care of their health by engaging in health-promoting behaviors. The facilitators also provided an overview of the group, including the curriculum and expectations around attendance.

SESSION 2: INTRODUCTION

Materials. Materials included a) a laptop computer with PowerPoint software; b) a projector; c) PowerPoint presentation handouts; and d) workbooks.

Themes/issues. The second session started with a PowerPoint (available from the author) that provided group members with an overview of body image among people living with HIV/AIDS. The presentation covered the following topics: a) the definition of body image; b) the impact of HIV/AIDS on the body (e.g., lipodystrophy); c) the physical, psychological, and social dimensions of body-related changes; d) coping with body changes and; e) the experience of body image among HIV-positive gay and bisexual men. After the presentation, the facilitators encouraged the group members to share their thoughts and feelings about the material covered in the presentation, particularly in how they have (or have not) experienced their bodies in relation to living with HIV/AIDS.

Homework. The facilitators distributed a workbook to each group member and explained that weekly homework assignments would be used as an opportunity to reflect on different factors that impact body image. Group members were asked to write a paragraph describing thoughts and feelings about how their sexual orientation impacted their thoughts and feelings about their bodies.

SESSION 3: BODY IMAGE AMONG GAY AND BISEXUAL MEN

Materials. Material included a) *Do I Look Fat?* (the DVD and discussion guide are available at www.doilookfatthemovie.com); b) a DVD player and; c) a TV/projector.

Themes/issues. The third session focused on the relationship between sexual orientation and body image. The group members first watched *Do I Look Fat?*, a documentary by Travis Mathews about eating disorders and body image in the gay community. The facilitators then processed the group members' thoughts and feelings about the themes that were highlighted in the movie using the *Do I Look Fat?* discussion guide.

Homework. Group members were asked to write a short paragraph about how their race, ethnicity and socioeconomic status impacted their thoughts and feelings about their bodies.

SESSION 4: THE IMPACT OF RACE, ETHNICITY AND SOCIOECONOMIC STATUS ON NUTRITION AND BODY IMAGE

Materials. Materials included a) *Super Size Me* (DVD); b) a DVD player and; c) a TV/projector.

Themes/issues. Segments of Morgan Spurlock's documentary Super Size Me were shown to group members to illustrate the impact of race, ethnicity and socioeconomic status on body image and dietary habits (1–4, 8, 13,

14, 24, 25, 33–36). The facilitators then discussed the group members' reactions to the movie, highlighting issues around food security and access to nutritious foods, in addition to identifying options for more affordable and nutritionally adequate food in their communities (e.g., neighborhood food co-operatives).

Homework. Group members were asked to write a brief paragraph about how images of the male body in the media (e.g., magazines, film) impacted their thoughts and feelings about their bodies.

SESSION 5: BODY IMAGE AND THE MEDIA

Materials. Materials included a) *Dissecting Magazine Images* activity (available at www.newday.com/films/wetdreams.html) and; b) magazine advertisements of men with a range of body types (e.g., muscular, overweight) for a variety of products (e.g., beauty products, clothing).

Themes/issues. This session is focused on promoting media literacy. The facilitators divided the group members into small groups. Each group was provided with two advertisements, and they were then instructed to answer the following questions for each image: a) What is the profession of the person in the ad?; b) Can you tell if the photo has been retouched? How?; c) What company and product is the ad trying to sell?; d) How are they trying to sell the product? What are they trying to get people to think about the product? What is it supposed to do?; e) If the ad is for a "beauty product," how does it define beauty? and; f) How does the ad make you think/feel about yourself? Do you relate to the ad?

Each small group presented the images and their answers to the six questions to the larger group. Throughout the discussion, the facilitators stressed the importance of not being a passive recipient of media images by recognizing the motives that corporations have in creating these images. The facilitators also highlighted the unrealistic expectations these types of images can create for individuals and the benefit of creating goals around nutrition and fitness that are based on an individual's desire to be healthy, rather than attain a potentially unrealistic body type.

Homework. Group members were asked to write a short paragraph about the times over the upcoming week at which they found themselves most aware of their bodies, and their thoughts about why their awareness of their bodies was heightened at those times.

SESSION 6: DEVELOPING BODY AWARENESS

Materials. Materials included a) large sheets of newsprint; b) pencils and; c) tape.

Themes/issues. This session focused on increasing body awareness. The facilitators invited an art therapist to lead this session who led the group members in a body tracing exercise in which they were divided into pairs

and asked to trace an outline of their partner's body on big sheets of paper that were taped to the wall (if an agency is not able to identify an art therapist to facilitate this session, the social worker would lead the group members in this exercise). Each group member had the opportunity to trace and be traced. The individual who was traced decided the position in which he would be traced (e.g., standing, crouching), and the facilitators stressed the importance of communication and respecting physical and emotional boundaries. For example, if the individual being traced was uncomfortable with how close the pencil was to his body, he was encouraged to tell the person tracing him. Also, the individual who was the tracer was encouraged to periodically check in with the individual being traced to ensure that he felt comfortable. The facilitators processed the exercise with the group members, particularly in how they experienced their bodies in both roles.

Homework. Group members were asked to write a short paragraph about any medical and/or psychiatric conditions with which they are diagnosed and how they impacted their thoughts about feelings about their bodies.

SESSION 7: COMORBID CONDITIONS AND BODY IMAGE

Materials. No materials were needed for this session.

Themes/issues. The group members were surveyed several weeks before this session around comorbid physical and/or mental health conditions with which they were diagnosed in preparation for this session. The most commonly reported condition was depression, therefore the session was tailored to address the relationship between depression, body image, and dietary habits, in addition to how changes in body shape related to taking anti-depressants impact adherence and the decision to take these medications.

Homework. Group members were asked to write a few sentences about how often they eat foods from the following categories on a weekly basis, and why they may eat small or large amounts of these types of food; a) fruits and vegetables; b) dairy; c) meat; d) fast food and; e) sweets.

SESSION 8: NUTRITION 101

Materials. Materials included a) United States Department of Agriculture Food Guide Pyramid (available at www.mypyramid.gov); b) food diary example and; c) blank food diaries.

Themes/issues. This session provided group members with an overview of basic nutrition information, with an emphasis on the following topics: a) the components of a balanced diet; b) portion size (the United States Department of Agriculture Food Guide Pyramid can be used as a guide) and; c) micro- and macro nutrient needs and calories. The dietician demonstrated

how to keep a daily food diary so that the group members could record their food intake, including portion size, over the week following this session.

Homework. Group members were asked to keep a food diary for one week by recording everything they ate on a daily basis, including an exact or best estimate of portion size, method of preparation, and time of day (e.g., breakfast, mid-afternoon snack).

SESSION 9: FOOD AND MOOD

Materials. Materials included a) guided meditation (available at www.metatronics.net/eat) and; b) dark chocolate and strawberries.

Themes/issues. This session was designed to help group members understand the reciprocal relationship between food and mood. The central theme of this session is that when people are depressed or anxious, they will often choose to eat certain foods that are comforting, but unhealthy, such as cookies and cake (e.g., "comfort foods"). The facilitators discussed motivations behind eating and how to become more aware of the difference between eating that is motivated by physical (hunger) and psychological (cravings) triggers. Food choices were also discussed in the context of social situations with family and friends, and the role that food-related memories can play in determining food choices.

The exercise for this group session was an eating meditation that is aimed at increasing awareness of the connection between food and mood. Each group member was given a food product that has a specific texture and taste (e.g., a strawberry, dark chocolate), and were then guided through the meditation. After the exercise, the facilitators processed the experience with the group members, particularly in how it felt to have a heightened sense of awareness of the food while eating.

Homework. Group members were asked to bring in an advertisement for a nutritional/dietary supplement or exercise plan/product for which they have questioned the accuracy.

SESSION 10: NUTRITION: FACTS AND MYTHS

Materials. Materials included advertisements of health and nutrition-related products.

Themes/issues. This group focused on increasing awareness of the false claims that many nutrition and fitness companies make in marketing and advertising their products. Each group member was asked to describe their advertisement, including whether they thought the product/program would produce the advertised results, and why. The facilitators stressed the importance of questioning what is being advertised, and showing these advertisements to people who have knowledge of nutrition and exercise in order to evaluate the product's function and accuracy.

Homework. Group members were asked to write a short paragraph about how body image impacted their HAART adherence.

SESSION 11: HAART ADHERENCE

Materials. No materials were used in this session.

Themes/issues. The focus of this session was the relationship between body image and HAART adherence. The facilitators explored members' fears of not knowing how HIV medications would impact their bodies, their uncertainty about whether body changes were the result of medications or other factors (e.g., aging, other physical conditions), and how healthy dietary habits can decrease the impact of HAART side effects.

Homework. The Verbal Challenge (*The Body Project*, Session 2): Group members were asked to describe real-life examples around pressures to be lean and/or muscular they have encountered, in addition to how they could respond to these comments to demonstrate disagreement with the lean/muscular ideal.

SESSION 12: BODY ACCEPTANCE I

Materials. Materials included Quick Comebacks to Thin-Ideal Statements (*The Body Project*, Session 3).

Themes/issues. This session focused on developing skills in challenging the lean/muscular body ideal. The facilitators reviewed the verbal challenge homework assignment by asking the group members to share the responses they recorded for the exercise. The facilitators then introduced the concept of body acceptance by eliciting the group members' thoughts and feelings about the difficulties associated with accepting body changes that are inconsistent with their ideal body shape. In the exercise for this session, "Quick Comebacks to Thin-Ideal Statements," the facilitators read statements that supported the lean/muscular ideal (e.g., "Look at that guy over there! He's so fat"). Group members were then asked to offer responses that challenge the comments. The facilitators then processed how it felt to challenge the lean/muscular ideal and how they could use this skill in real life situations.

Homework. The Behavioral Challenge (*The Body Project*, Session 3): Group members were asked to do something that they have not done because of body image concerns, and then discuss the experience with the group during the next session. The facilitators encouraged the group members to choose challenging, but achievable challenges.

SESSION 13: BODY ACCEPTANCE II

Materials. No materials were using during this session.

Themes/issues. This session provided group members with the opportunity to strategize around how to deal with future pressures to be

lean/muscular, in addition to working towards talking about their bodies more positively. The facilitators began this session by asking group members to share their experience with the behavioral challenge exercise. The facilitators discussed what was difficult—or even perhaps unexpectedly easy—about the exercise, in addition to helping group members who did not complete the assignment to identify and address any barriers to the behavioral challenge exercise.

The facilitators then led the group in two exercises: a) *Future Pressures* to be *Thin* (*The Body Project*, Session 4), which focused on how to deal with pressures to be lean/muscular that they may confront in the future and; b) *The Self-Affirmation Exercise* (*The Body Project*, Session 4), which helped group members to challenge body-related concerns by talking about their bodies in a positive way.

Homework. Group members were asked to complete a Top-10 list (*The Body Project*, Session 2) on which they would record ten things people with HIV/AIDS can do to resist the lean/muscular ideal. Group members were also asked to bring a healthy snack for a communal meal to commemorate the end of the group.

SESSION 14: COMMUNAL MEAL

Materials. Materials included food for the communal meal.

Themes/issues. The final group was a communal meal to which both the facilitators and group members contributed a healthy dish. During the meal, the group members shared their Top 10 lists to encourage each other to continue to challenge the lean/muscular ideal. This session was also used to process the group experience in addition to eliciting feedback about the group that could be used for the future.

DISCUSSION

To our knowledge, this is the first group to address nutrition and body image dissatisfaction among people living with HIV/AIDS. People with HIV/AIDS often experience changes in body shape, which can result in body image dissatisfaction to which gay and bisexual men are particularly vulnerable. Further, when individuals are dissatisfied with their appearance, they may develop poor dietary habits. Therefore, a group that addressees both body image and nutrition is particularly important for people living with HIV/AIDS, especially because diet is a critical component of maintaining physical health in this population.

Using a psychoeducational framework provided the flexibility to integrate different evidence-based interventions (e.g., media literacy, nutrition counseling) that have proven effectiveness in improving body image

and nutrition. Interdisciplinary collaboration is critical to the success of this intervention. The combination of the expertise from the fields of social work/mental health and nutrition provided an opportunity to help group members understand the reciprocal relationship between psychosocial/affective issues and health behaviors. The facilitators should take every opportunity to highlight this connection, because it is the foundation for change.

REFERENCES

- Ammassari, A., Antinori, A., Cozzi-Lepri, A., Trotta, M. P., Nasti, G., Ridolfo, A. L. . . . LipoICoNA Study Group. (2002). Relationship between HAART adherence and adipose tissue alterations. *Journal of Acquired Immune Deficiency Syndromes*, 31, S140–S144.
- Baum, M. K., Shor-Posner, G., Zhang, G., Lai, H., Quesada, J. A., & Campa, A., . . . Page, J. B. (1997). HIV-1 infection in women is associated with severe nutritional deficiencies. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, 16, 272–278.
- Becker, C. B., Smith, L., & Ciao, A. C. (2005). Reducing eating disorder risk factors in sorority members. *Behavior Therapy*, *36*, 245–254.
- Blashill, A., & Vander Wal, J. S. (2011). Components of body image in gay men with HIV/AIDS. *American Journal of Men's Health*, *5*(1), 6–10.
- Burgoyne, R., Collins, E., Wagner, C., Abbey, S., Halman, M., Nur, M., . . . Walmsley, S. (2005). The relationship between lipodystrophy-associated body changes and measures of quality of life and mental health for HIV-positive adults. *Quality of Life Research*, 14, 981–990.
- Cabrero, E., Griffa, L., & Burgos, A. (2010). Prevalence and impact of body physical changes in HIV patients treated with highly active antiretroviral therapy: Results from a study on patient and physician perceptions. *AIDS Patient Care and STDs*, 24(1), 5–13.
- Carper, T. L., Negy, C., & Tantleff-Dunn, S. (2010). Relations among medial influence, body image, eating concerns, and sexual orientation in men: A preliminary investigation. *Body Image*, 7, 301–309.
- Carr, A., Samaras, K., Burton, S., Law, M., Freund, J., Chisholm, D.J., & Cooper, D. A. (1998). A syndrome of peripheral lipodystrophy, hyperlipidaemia and insulin resistance in patients receiving HIV protease inhibitors. *AIDS*, *12*(7), F51–F58.
- Coodley, G. O., Coodley, M. K., Nelson, H. D., & Loveless, M.O. (1993). Micronutrient concentrations in the HIV wasting syndrome. *AIDS*, 7, 1595–1600.
- Chlebowski, R. T., Grosvenor, M. B., Bernhard, N. H., Morales, L. S., & Bulcavage, L. M. (1989). Nutritional status, gastrointestinal dysfunction, and survival in patients with AIDS. *The American Journal of Gastroenterology*, 84, 1288–1292.
- Duran, S., Saves, M., Spire, B., Cailleton, V., Sobel, A., Carrieri, P., . . . APROCO Study Group. (2001). Failure to maintain long-term adherence to highly active antiretroviral therapy: the role of lipodystrophy. *AIDS*, *15*, 2441–2444.
- Feldman, M. B., & Meyer, I. H. (2007). Eating disorders in diverse lesbian, gay, and bisexual populations. *International Journal of Eating Disorders*, 40, 218–226.

- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fields-Gardner, C., & Fergusson, P. (2004). Position of the American Dietetic Association and Dietitians of Canada: Nutrition intervention in the care of persons with human immunodeficiency virus infection. *Journal of the American Dietetic Association*, 104, 1425–1441.
- Garner, D. M., Olmstead, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871–878.
- Grunfeld, C., Saag, M., Cofrancesco, J., Lewis, C. E., Kronmal, R., Heymsfield, S. . . . Study of Fat Redistribution and Metabolic Change in HIV Infection (FRAM). (2010). Regional adipose tissue measured by MRI over 5 years in HIV-infected and control participants indicates persistence of HIV-associated lipodystrophy. *AIDS*, 24, 1717–1726.
- Guaraldi, G., Orlando, G., Murri, R., Vandelli, M., De Paloa, M., Beghetto, B., ... Wu, A. W. (2006). Quality of life and body image in the assessment of psychological impact of lipodystrophy: Validation of the Italian version of the Assessment of Body Change and Distress questionnaire. *Quality of Life Research*, 15, 173–178.
- Guaraldi, G., Murri, R., Orlando, G., Giovanardi, C., Squillace, N., Vandelli, M., . . . Wu, A. W. (2008). Severity of lipodystrophy is associated with decreased health-related quality of life. *AIDS Patient Care and STDs*, *22*, 577–585.
- Guenter, P., Muurahainen, N., Simons, G., Kosok, A., Cohan, G. R., Rudenstein, R., . . . Turner, J. L. (1993). Relationship among nutritional status disease progressions and survival in HIV infection. *Journal of Acquired Immune Deficiency Syndromes*, 6, 1130–1138.
- Hendricks, K. M., Mwamburi, D. M., Newby, P. K., & Wanke, C. A. (2008). Dietary patterns and health and nutrition outcomes in men living with HIV infection. *American Journal of Clinical Nutrition*, 88, 1584–1592.
- Halkitis, P. N., Green, K. A., & Wilton, L. (2004). Masculinity, body image, and sexual behavior in HIV-seropositive gay men: A two-phase formative behavioral investigation using the internet. *International Journal of Men's Health*, *3*(1), 27–42.
- Huang, J. S., Lee, D., Becerra, K., Santos, R., Barber, E., & Mathews, W. C. (2006). Body image in men with HIV. *AIDS Patient Care and STDs*, *20*, 668–677.
- Irving, L. M., & Berel, S. (2001). Comparison of media-literacy programs to strengthen college women's resistance to media images. *Psychology of Women Quarterly*, 25, 103–111.
- Kaiser, J. D., & Donegan, E. (1996). Complementary therapies in HIV disease. *Alternative Therapies in Health and Medicine*, *2*(4), 42–46.
- Kelly, J. S., Langdon, D., & Serpell, L. (2009). The phenomenology of body image in men living with HIV. *AIDS Care*, *21*, 1560–1567.
- Klein, S., Kinney, J., Jeejeebhoy, K., Alpers, D., Hellerstein, M., Murray, M., ... Tomey, P. (1997). Nutrition support in clinical practice: Review of published data and recommendations for future directions. *American Journal of Clinical Nutrition*, 66, 683–706.
- Marin, A., Casado, J. L., Aranzabal, L., Moya, J., Antela, A., Dronda, F., . . . Marino, S. (2006). Validation of a specific questionnaire on psychological and social

- repercussions of the lipodystrophy syndrome in HIV-infected patients. *Quality of Life Research*, 15, 767–775.
- McFarland, M. B., & Kaminski, P. L. (2009). Men, muscles, and mood: The relationship between self-concept, dysphoria, and body image disturbances. *Eating Behaviors*, *10*(1), 68–70.
- McKinley, M. J., Goodman-Block, J., Lesser, M. L., & Salbe, A. D. (1994) Improved body weight status as a result of nutrition interventions in adult HIV-positive patients. *Journal of the American Dietetic Association*, *94*, 1014–1017.
- Morrison, M. A., Morrison, T. G., & Sager, C. L. (2004) Does body dissatisfaction differ between gay men and lesbian women and heterosexual men and women? A metaanalytic review. *Body Image*, 1, 127–138.
- O'Brien, K. M., & LeBow, M. D. (2007). Reducing maladaptive weight management practices: Developing a psychoeducational intervention program. *Eating Behaviors*, *8*, 195–210.
- Olivardia, R., Pope, H. G., Borowiecki, J. J., & Cohane, G. H. (2004). Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychology of Men & Masculinity*, 5, 112–120.
- Posavac, H. D., Posavac, S. S., & Weigel, R. G. (2001). Reducing the impact of media images on women at risk for body image disturbance: Three targeted interventions. *Journal of Social and Clinical Psychology*, 20, 324–340.
- Power, R., Tate, H. L., McGill, S. M., & Taylor, C. (2003). A qualitative study of the psychosocial implications of lipodystrophy syndrome on HIV positive individuals. *Sexually Transmitted Infections*, 79, 137–141.
- Rabeneck, L., Palmer, A., Knowles, J. B., Seidehamel, R. J., Harris, C. L., Merkel, K. L., . . . Akrabawi, S. S. (1998). A randomized controlled trial evaluating nutrition counseling with and without oral supplementations in malnourished HIV-infected patients. *Journal of the American Dietetic Association*, *98*, 434–438.
- Reid, C., & Courtney, M. (2007). A randomized clinical trial to evaluate the effect of diet on quality of life and mood of people living with HIV and lipodystrophy. *Journal of the Association of Nurses in AIDS Care*, 18(4), 3–11.
- Reynolds, N. R, Neidig, J. L., Wu, A. W., Gifford, A. L., & Holmes, W. C. (2006). Balancing disfigurement and fear of disease progression: Patient perceptions of and related distress from HIV body fat redistribution. *AIDS Care*, 18, 663–673.
- Santos, C. P., Felipe, Y. X., Braga, P. E., Ramos, D., Lima, R. O., & Segurado, A.
 C. (2005). Self perception of body changes in persons living with HIV/AIDS: Prevalence and associated factors. *AIDS*, 19(Suppl 4), S14–S21.
- Saucier, J. A., & Caron, S. L. (2008). An investigation of content and media images in gay men's magazines. *Journal of Homosexuality*, *55*, 504–523.
- Segal-Isaacson, C. J., Tobin, J. N., Weiss, S. M., Brondolo, E., Vaughn, A., Wang, C., . . . Ironson, G. (2006). Improving dietary habits in disadvantaged women with HIV/AIDS: The SMART/EST women's project. *AIDS and Behavior*, *10*, 659–670.
- Sharma, A., Howard, A. A., Klein, R. S., Schoenbaum, E. E., Buono, D., & Webber, M. P. (2007). Body image in older men with or at-risk for HIV infection. *AIDS Care*, 19, 235–241.

- Siever, M. D. (1994). Sexual orientation and gender as factors in socioculturally acquired vulnerability to body dissatisfaction and eating disorders. *Journal of Consulting and Clinical Psychology*, 62, 252–260.
- Stice, E., Orjada, K., & Tristan, J. (2006). Trial of a psychoeducational eating disturbance intervention for college women: A replication and extension. *International Journal of Eating Disorders*, *39*, 233–239.
- Stice, E., & Presnell, K. (2007). *The body project*. New York, NY: Oxford University Press.
- Stice, E., Shaw, H., Burton, E., & Wade, E. (2006). Dissonance and healthy weight eating disorder prevention program: A randomized efficacy trial. *Journal of Consulting and Clinical Psychology*, 74, 263–275.
- Tate, H., & George, R. (2001). The effect of weight loss on body image in HIV-positive gay men. *AIDS Care*, 13(2), 163–169.
- Watson, R., & Vaughn, L. M. (2006). Limiting the effects of the media on body image: Does the length of a media literacy intervention make a difference? *Eating Disorders*, 14, 385–400.
- Yamamiya, Y., Cash, T. F., Melnyk, S. E., Posavac, H. D., & Posavac, S. S. (2005). Women's exposure to thin-and-beautiful media images: Body image effects of media-ideal internalization and impact-reduction interventions. *Body Image*, 2, 74–80.