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The Impact of Relationship Wellness Checkups with Gay Male Couples

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Relationship health impacts many other health outcomes, including physical and mental well-being and the health of children in the family system. Despite the importance of relationship health, couples do not regularly seek support for maintaining their connection. Early intervention programs that provide support are a growing public health initiative. One brief early intervention program, the Marriage Checkup (MC), positively impacts relationship satisfaction, prevents decline, and improves health on other relationship variables such as intimacy. To date, the MC research has included only heterosexual couples. This study explored the question, “What is the impact of a relationship wellness checkup on gay male couples’ relationship satisfaction?” Using single-subject multiple-baseline, multiple-probe design, this study extends MC research to include gay male couples. Findings showed that the MC positively influenced satisfaction ($NAP = .73$) for the group overall. In an analysis of each couple, two of the three couples improved and one couple showed a slight decline in satisfaction. The likely confounder for this third couple was the concurrence of their marriage and honeymoon and the baseline phase. In light of research with newlywed and engaged couples from other studies, overall the results tentatively suggest that the MC may increase satisfaction for gay male couples with additional research needed for newlywed couples.

Keywords: marriage checkup, gay male couples, relationship satisfaction, marriage early intervention, motivational interviewing

Introduction

Given the range of benefits that stem from relational health, programs aimed at relationship wellness are becoming valuable as public health initiatives (Cordova et al., 2014; Sollenberger et al., 2013). These benefits of relational health include, as examples, improved general health (Pihet, Bodenmann, Cina, Widmer, & Shantinath, 2007; Robles, Slatcher, Trombello, & McGinn, 2014), improved mental health (Jaremka, Lindgren, & Kiecolt-Glaser, 2013), and improved immune system functioning (Jaremka, Glaser, Malarkey, & Kiecolt-Glaser, 2013). However, reaching out for support is a difficult decision. For example, in one study in Oklahoma, only 37% of heterosexual couples who got divorced sought help—either from a counselor, a clergy person, or both—before getting divorced (Johnson et al., 2002). Barriers to seeking therapy include lack of time and money, worries about being distressed enough to need help, and fears about the process (Fleming & Córdoba, 2012). Early interventions, such as checkups, education, and enrichment programs, aim to reduce these barriers by offering support for ongoing health before therapy is needed or before couples decline and separate (Bradbury & Lavner, 2012; Markman & Rhoades, 2012). Wellness programs aim to help healthy couples stay healthy—these programs can boost satisfaction and prevent decline (Cordova, 2014), thus contributing to relational well-being and the physical and mental health bene-

fits that coincide.

Although similar in many respects to heterosexual couples (Julien, Chartrand, Simard, Bouthillier, & Bégin, 2003; Mackey, Diemer, & O’Brien, 2004), gay male couples do face additional stressors such as discrimination, perceived discrimination, and internalized homophobia, which impact their relationship health (Frost & Meyer, 2009). In light of these additional stressors, wellness programs could help these marginalized couples maintain their relationship health while coping with the added challenges of living in a climate of prejudice. In related research on this idea, two studies specifically examined the effectiveness of a relationship education program for gay male couples and found positive outcomes (Buzzella, Whitton, & Tompson, 2012; Whitton, Weitbrecht, Kuryluk, & Hutsell, 2016). No studies to date

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have examined the effectiveness of checkups for gay male couples. The following study adds to the body of research by examining how one checkup program, the Marriage Checkup (MC), works for gay male couples. The present study was part of a larger research project on relationship enhancement with sexual minority couples. Beside this gay male study was a lesbian study arm (Minten & Dykeman, 2018) and a transgender study arm (Minten & Dykeman, n.d.) which followed similar methods. Literature pertinent to this study includes checkup programs and relationship satisfaction.

Checkup Programs

Checkup programs are designed to help couples maintain health and prevent decline (Trillinggaard, Fentz, Hawrilenko, & Cordova, 2016) and are preventative in nature across all three levels: primary, secondary, and tertiary (Marchand, Stice, Rohde, & Becker, 2011). Primary prevention targets the general population and aims to stop problems before they occur. Checkups are often open to all couples who want to attend—even if the couple simply wants to enrich or improve an already happy relationship. Secondary prevention targets people at risk with the goal to prevent or reduce problems at the earliest stages. For couples in the early stages of decline or distress, checkups aim to help them get back on track. Tertiary prevention targets groups that have concerns. In a checkup for couples who are severely distressed and need more help, clinicians can support the couple's efforts to find additional resources such as therapy and explore barriers or concerns. Thus, checkups operate like a regular visit with a healthcare provider for physical health; relational health can be supported, problems can be caught early, and if concerns arise and cannot be addressed in the meeting, additional care can be recommended.

Three outcomes from the Marriage Checkup (MC) research led to choosing it as the specific checkup for this study: the MC has been effective in research with heterosexual couples by (1) appealing to couples (Morrill et al., 2011; Sollenberger et al., 2013), (2) promoting help-seeking for couples who need additional services such as therapy (Gee, Scott, Castellani, & Cordova, 2002), and (3) improving relationship satisfaction and other variables (Cordova, Warren, & Gee, 2001; Cordova et al., 2005, 2014). In addition, the MC is based on motivational interviewing principles, and thus is an ideal program for couples who may experience marginalization (Johnson et al., 2002). Clinicians following motivational interviewing (MI) principles listen to how couples perceive a situation and aim for a collaborative relationship that prizes the couples' perspectives (Cordova et al., 2001; Miller, 2013).

A full description of the MC protocol is available in Cordova (2014), *The Marriage Checkup*. The MC is a brief intervention with only two sessions. Before the first session, partners separately complete relationship surveys. In

the first session, couples share their relationship history, discuss an area of conflict, and review strengths and concerns from their surveys. In the second session, the clinician provides feedback based on the surveys and observations from discussions from the first session. Then the couple and the clinician collaborate on potential next steps to improve the relationship, if relevant. The couple takes a written report home and a plan for suggested future actions to keep their relationship strong. The mechanism of change for the MC is time spent fostering intimate conversations (Cordova et al., 2005) as well as other factors such as partners seeing the positive qualities of their relationship, increasing their acceptance of each other, and activating resources to support their own well-being (Cordova et al., 2014).

Negative outcomes may occur in checkup studies. Cordova et al. (2005) noted that heterosexual couples in a control group had a decrease in satisfaction during the study. Cordova et al. (2005) cited two potential reasons for this finding: (1) continuing decline occurred as it would have even without being in a control group, or (2) the couples in the control group had a negative reaction to identifying relationship concerns without support.

Also, some checkups used clinicians to guide the process while others had couples complete the checkup on their own. The latter approach yielded two concerns for couples. First, a small percentage (3%–5%) of couples who completed assessments with no clinician reported negative impacts, including anxiety completing the tasks and regret for rekindling old problems (Bradbury, 1994; Worthington, McCullough, Shortz, Mindes, & et al, 1995). Second, in a study comparing clinician-led to self-led checkups, the clinician-led programs yielded more benefits (Larson, Vatter, Galbraith, Holman, & Stahmann, 2007).

For this study, two aspects of the design aimed to reduce the possibility of these negative outcomes. First, in the single-subject design, each participant couple served as their own control, thus removing the control group which may have had a negative impact on some couples as noted. Second, the MC format had clinician involvement throughout the process, following the least harmful and most effective checkup process.

No research currently exists on the impact of checkups with gay male couples. While three studies examined only heterosexual couples (Cordova et al., 2005; Larson et al., 2007; Worthington et al., 1995), a recent study on the MC included six same-gender couples (Cordova et al., 2014). Though the gay couples participated, the researchers excluded their data in the outcome analysis, so the impact of the checkup on the gay couples' health remains unknown. In an MC study with a focus on sexual minority couples, researchers found that the MC had a positive effect on lesbian couples' satisfaction (Minten & Dykeman, 2018). This current study parallels the design used with lesbian couples to

explore the impact of the MC on gay male couples.

Relationship Satisfaction

Relationship satisfaction is defined as the subjective experience of the quality of a relationship (Graham, Diebels, & Barnow, 2011). Satisfaction correlates with relationship health through a diverse range of variables in research with heterosexual couples including mental health, physical health (Robles et al., 2014), and relationship longevity (Graham et al., 2011). In addition, negative behaviors in conflict for heterosexual couples relate to lower satisfaction, and stronger friendship correlates with higher satisfaction (Julien et al., 2003; Mackey et al., 2004). Strong emotional and sexual intimacy relate to higher satisfaction (Brown & Weigel, 2017; Yoo, Bartle-Haring, Day, & Gangamma, 2013). Positive interactions, empathy, humor, affection, and other perceived positive aspects of the relationship correlate with higher satisfaction (Gottman et al., 2003). Lower satisfaction connects with contempt, disgust, and defensiveness (Gottman et al., 2003).

Satisfaction assessment, while providing a useful summary of a couple's current level of distress and carries rich relationship to other variables, has its limits. A relationship can be both satisfying and dissatisfying at the same time (Bradbury, Fincham, & Beach, 2000; Whisman, Beach, & Snyder, 2008), and couples who have stable satisfaction are not immune to divorce (Bradbury & Lavner, 2012). When examining what variables fit for early intervention programs such as checkups, the stability of satisfaction may be a limitation as it may not help predict decline at these early stages. Researchers are exploring alternatives; for example, in one MC study with heterosexual couples, the effect size for satisfaction was small ($d = .23$) but the effect size for intimacy was moderate ($d = .37$). Despite these limitations, satisfaction remains a common variable across studies and provides a reasonable starting point as a dependent variable for this pilot intervention. Keeping the protocol close to the existing version also allows for comparisons across differences in sexual orientation.

Factors that contribute to global satisfaction are similar between gay male couples and heterosexual couples (Julien et al., 2003; Mackey et al., 2004). However, some differences between these groups of couples exist. For example, Gottman et al. (2003) found that higher relationship satisfaction in heterosexual couples correlated with low physiological arousal. In contrast, high levels of physiological arousal related to higher satisfaction for gay couples. In a study that focused on how discrimination impacts gay male couples, internalized homophobia and community-connectedness impacted satisfaction (Frost & Meyer, 2009). Internalized homophobia increased depression, which also reduced relationship satisfaction. Outness did not impact relationship satisfaction (Frost & Meyer, 2009). A similar study found

that family support was unrelated to relationship quality, but friend support was a positive factor (Graham & Barnow, 2013). Validation was also uniquely important in gay male couples' satisfaction (Gottman et al., 2003). One qualitative study found that couples viewed discrimination as a shared challenge that strengthened their relationships and improved their connection (Frost, 2014). In another qualitative study, gay male couples together over 10 years said that factors in their relationship satisfaction were (a) sexual compatibility, (b) commitment, (c) having common interests, (d) sharing the same values, (e) being able to compromise, (f) sharing complementary personalities, (g) family and community support, and (h) being able to resolve conflict (Grey, 2005).

Of note, some of these topics that couples stated were important to their health were part of the MC survey topics, including maintaining a healthy sex life, sharing common interests, and fostering compromise and conflict skills. Factors related to relationship satisfaction for gay men from the research that were not in the current checkup surveys included reducing internalized homophobia, coping with prejudice, and finding supportive friendships. These topics could potentially be added to future checkup surveys to determine whether they have additional benefits. For this study, researchers chose to use the current checkup protocol with as few changes as possible to compare results of previous MC studies to this population. Future studies can then compare changes to the protocol and consider how these impact the outcome.

Research Questions

Given that no outcome research on checkups with gay male couples exists in the literature, the present study aimed to fill this gap. This study focused on the Marriage Checkup with gay male couples with the research question, "What is the impact of a relationship wellness checkup on relationship satisfaction for gay male couples?"

Methods

Single-subject design provided an ideal method to test this existing MC program with gay male couples. Single-subject design uses a small sample size while also providing means for experimental control and quantitative analysis of results. Although larger samples offer generalizability from the start, single-subject design provides researchers with a closer look at how an intervention works for each participant couple. If findings are mixed in a small sample, problems are readily addressed early in the research process; thus, a series of smaller studies helps researchers make early adjustments to protocols (Biglan, Ary, & Wagenaar, 2000). In addition, single-subject design allows for each participant couple to receive the intervention—each couple has control data during baseline and then outcome data during and after the intervention—so that a control group is not needed. For this

study, researchers wanted to determine whether or not a small set of gay male couples benefited from the MC program as it stands, and even if they did, to leave room for additional small studies to see whether they may benefit from changes to the program even more than from the standard program. Single-subject design provided an initial small group sample; changes—if needed—could then be made, and additional studies could be done. The process could move more efficiently with a series of small groups. Once a potentially effective program—based on smaller samples—was established, a larger study could then be run, or a series of small studies could be run, to examine generalizability.

For experimental control, these researchers used a multiple-baseline multiple-probe design. This design allowed researchers to assess for threats to history, maturation, testing, and other concerns related to internal validity. While not widely used at present, single-subject design, including multiple-baseline and multiple-probe design, is becoming much more popular, especially in psychology and other social sciences (Georgoulakis, Zollmann, Pate, & Hallett, 2017). The design allows for assessing threats to internal validity and gains generalizability through replication. The independent variable in the design was a checkup, and the dependent variable was couple satisfaction. Single-subject design generally has a sample size of three to measure change across participants, support experimental control, and assess threats to internal validity (Barlow, Nock, & Hersen, 2009), so the sample size for this study was set at three gay male couples.

Participants

Recruitment was conducted via print and online advertisements, through local LGBTQ affirmative organizations, and by word of mouth. The criteria for eligibility included the following factors: (a) partners self-identified as being in a gay male relationship, (b) couples considered themselves to be in committed partnerships (their definition of committed, whether monogamous, non-monogamous, or another definition of committed), (c) couples were cohabiting, (d) couples were not in or seeking couples therapy, (e) couples had been together at least one year, (f) each partner was over 18 years of age, and (g) couples considered for the study had to have an average score on the Couple Satisfaction Index Four Item (CSI-4) between 13.70 and 18.30. The range for the last criterion was set to recruit couples who were not so distressed that they needed couples therapy and not so high in satisfaction that a ceiling effect could occur.

Initial recruitment lasted six months; one couple enrolled. The researchers added a financial honorarium of \$60 (all couples received the honorarium, including the first couple) and began referring to the program as a “relationship wellness checkup” instead of a “relationship checkup.” Two more couples enrolled within two months. In week eight, one couple

left the study during their baseline phase. When their scores showed decline, researchers asked the couple if attending the intervention sooner, or receiving other support, would have assisted them. They responded that they had separated and did not want to continue the study. One additional couple completed screening and entered the study. This couple followed the same baseline schedule as the original third couple nine weeks later. Three couples completed the checkup program. Further description of personal details was omitted to protect confidentiality.

Participant couple one (C1). One partner in this couple identified as Latino; he was in his mid-20s and pursuing his master’s degree. His partner was Caucasian, also in his 20s, and worked as a registered nurse. Both had completed bachelor’s degrees. They had been together 17 months, and were in a committed relationship. Their initial CSI-4 average score was 16.00. The couple believed the checkup would be a way to see how their relationship was doing and hoped the checkup would parallel a physical health checkup for their relationship. They also wanted to contribute to research. The couple took the relationship checkup intervention on weeks four and five.

Participant couple two (C2). One partner was in his mid-50s and Caucasian; he worked as a business executive. His partner was in his mid-40s, Caucasian, and worked as a physician. They both had higher education—the first partner a bachelor’s degree and the second his medical degree. Key aspects of their relationship were that they had (a) known each other for seven years, (b) been in a committed relationship for five years, and (c) been married recently. They wanted to do the checkup to contribute to research that would benefit others and to improve their relationship. Their initial CSI-4 average score was 16.00, and they completed the checkup on weeks six and seven.

Participant couple three (C3). One partner was in his late-20s, Caucasian, and worked in technical support. His partner was in his early-30s, Latino and Caucasian, and worked as a personal chef and household manager. They both had bachelor’s degrees. They had been in a relationship for seven years and married when marriage became legal in their state in 2014. They attended to contribute to research and to get another perspective on their relationship. Their initial CSI-4 average score was 17.50. They received the intervention on weeks eight and nine.

Measures

Couples satisfaction inventory four-item (CSI-4). To create the CSI, Funk and Rogge (2007) surveyed 5,315 people using 280 questions from established measures. The questions with the most power and precision formed the CSI. The CSI had strong construct and convergent validity with the original scales and it showed higher power and precision than some of the original scales. Cronbach’s alpha for

the CSI-4 is .94, compared to the Dyadic Adjustment Scale (DAS-4) at .84 and the Marital Adjustment Test (MAT) (15) at .88. It was similar to the Quality of Marriage Index (QMI-6) at .96. The CSI-4 also distinguished distressed from non-distressed couples, which was critical for initial screening for this study. The scale for the CSI-4 ranged from 0-21. The distress cut-off score was 13.5.

The CSI was designed for use with couples from seriously dating to married (Graham et al., 2011). Gay male couples' relationship status ranged from living together, to domestic partnership, to married, to in a long-term relationship by other definition. The language of the CSI referred to "partner" rather than "spouse" and to "relationship" rather than "marriage." Thus, no language changes needed to be made. In addition, gay and lesbian individuals comprised 7% of the original sample for testing the measure—a small percentage but part of the sample nonetheless.

One concern regarding the CSI was a drop in effectiveness in measuring change at higher scores, which can create a ceiling effect (Funk & Rogge, 2007). The scale was fully anchored. The first item had a seven-point scale (0-6). Answers ranged from "extremely unhappy" to "perfect." The remaining three items fell on a six-point scale (0-5). Answers ranged from "a little" to "completely." A sample question read, "I have a warm and comfortable relationship with my partner."

Studies completed to date with the MC used self-report satisfaction measures to assess effectiveness (Cordova et al., 2001, 2005, 2014); thus, relationship satisfaction for this study had comparison scores from previous research. Researchers for this study sought a satisfaction measure that was short, effective, and suitable for gay male couples. The CSI-4 was selected for its fit with three criteria. First, the short form of only four items was ideal for the study design. Couples took the survey six to seven times (the difference between six or seven surveys depended on their baseline position—see Figure 1). Second, the shorter form reduced the threat to internal validity related to testing multiple times by keeping the testing process short. Third, as noted, the language of the CSI was designed for a wide range of couples, including gay couples.

Procedures

The study was approved by the Oregon State University Institutional Review Board (Study ID 7076). Participants signed a written informed consent approved by the IRB Review Board. The researchers informed potential participants about study activities in the consent document and covered couples' questions either in person or by phone. The consent included that their results would be part of a study through the university. The study would run for 10 weeks, and during two weeks of the study, they would attend on-site appointments. Informed consent included statements that be-

ing observed and recorded could be stressful, that the study could lead to an increased awareness of oneself and one's partner, and that no participant needed to reveal information they were uncomfortable revealing (Bradbury, 1994).

Phase A was the non-treatment baseline and Phase B was the MC intervention. The researchers randomly assigned the length of Phase A for each couple to be three, five, or seven weeks long. For Phase A, couples took the CSI-4 at least three times to establish baseline (Hawkins, Sanson-Fisher, Shakeshaft, D'Este, & Green, 2007; Scruggs & Mastropieri, 1998) using Qualtrics software. The schedule for taking the CSI-4 followed recommendations for multiple-probe designs—the first week of baseline and the three weeks before the intervention (D. Gast, Lloyd, & Ledford, 2014). Thus, the first baseline couple took the CSI-4 three weeks in a row for a total of three tests. The second and third couples, who had longer baseline times, took the CSI-4 on the first week of the study as well as three weeks before their intervention, for a total of four probes. During Phase B couples completed the CSI-4 after each of the two treatment sessions and one week later, for a total of three probes for all couples in Phase B. For analysis, the researchers averaged the CSI-4 scores from each partner.

Intervention

Phase B of the study was a two-session MC intervention. The intervention began with three surveys (couples were sent these surveys prior to the first meeting): Relationship Domains Assessment, Areas of Concern, and Areas of Strength (Cordova, 2014). These surveys had not been tested for validity or reliability, and Cordova (2014) noted that validated surveys could be substituted for this part of the MC protocol if needed. As this study aimed to mirror the MC as closely as possible, these surveys, which are those used in the MC, were kept.

In the initial session, as the first task, couples shared their relationship history. The clinician asked about their early dating through to the present day. Then, each couple decided on a conflict topic and discussed the topic in the session. Finally, each partner shared their perspective about one of their top three rated strengths and one of their top three rated concerns from their surveys. The session was 75-90 minutes long (Cordova, 2014).

The second session occurred one week after the first. In the second session, couples received feedback from the clinician based on their work in the first session as well as information from CSI-4 scores and the three MC surveys. The clinician offered information from the session and from related research, then sought the couples' thoughts and ideas about each piece of information. The end of the second session was a couple-driven discussion of what might be helpful, from their perspective, as a next step in maintaining a healthy relationship. This session was also 75-90 minutes

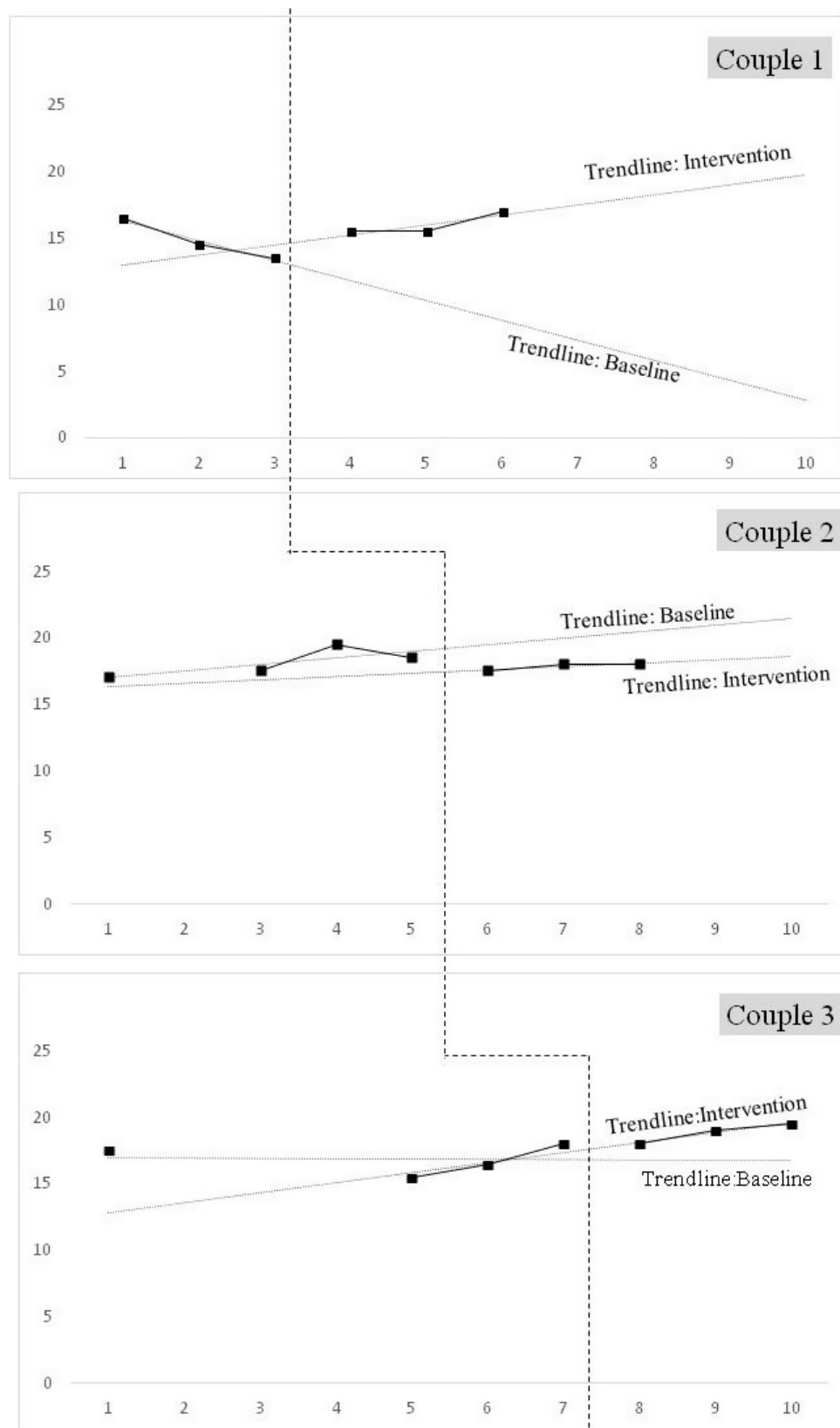


Figure 1. Gay Male Couples' Relationship Satisfaction Across Baseline and Intervention Phases

long.

In this study, the MC was adapted slightly to reduce bias in the protocol. Overall, the intervention remained as unchanged as possible in order to compare to previous study outcomes. The changes in protocol were weighed in terms of the potential influence on outcome and the potential cost of not making the changes. The adaptations to the protocol were limited to what was deemed necessary to reduce bias or perceived bias toward the couples as an effort to avoid harm. In addition, the changes were unrelated to the MC's mechanisms of change. The first change was that the program advertisement mentioned gay couples specifically. This change was essential to recruit gay couples. Second, researchers made some minor changes in the written materials for the intervention. These changes included shifting language from "marriage" to "relationship" and rephrasing one question on a survey from "our relationship is suffering the effects or aftereffects of an affair," to "our relationship is suffering from a breach in our sexual or intimacy agreement, such as an affair." In addition, during the two sessions, the therapist's responses included awareness of gay male couples' concerns in at least two ways. First, the therapist provided information from research on gay male couples' health in the session and in the feedback report. Second, the therapist listened for, and validated, experiences of heterosexism and homophobia as well as affirmed the couples' healthy coping responses to these forms of prejudice. All of these changes may have impacted the outcome of the study.

Therapist

The facilitator for the checkups had worked full-time for over 13 years in clinical settings, specializing in couple therapy. She is a Licensed Marriage and Family Therapist, a Licensed Clinical Drug and Alcohol Counselor, and a nationally-certified sex therapist. She is a MINT member (Motivational Interviewing Network of Trainers) and a MIA-STEP trainer (Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency). She has three post-master's certificates: couple and family therapy, LGBTQ couples and families, and sex therapy. She was completing a PhD in counseling at the time of the study.

Treatment Fidelity

A shortened version of Cordova's fidelity assessment for the MC (personal communication, October 1, 2014) guided the fidelity check. This assessment required a rater to check off therapist behaviors during the session as simply present or not present. One rater, a PhD student in counselor education and Marriage and Family Therapist, reviewed one set of randomly-selected sessions. She observed standard couple therapist behaviors as part of the fidelity instrument, such as the therapist asking particular questions and supporting the couple in expressing vulnerability. The

rater evaluated the first and second session for one couple, which accounted for the recommended 30% for review (Lombard, 2004). Stat Trek's random number generator selected the session (<http://stattrek.com/statistics/random-number-generator.aspx>). The reviewer found that the clinician was 100% faithful to the model with a score of 40 out of 40.

Data Analysis

Analysis included baseline stability, trend at baseline, and trend during and after the intervention (D. L. Gast & Spriggs, 2010). For baseline stability, researchers used a fixed time-interval criterion (Perone, 1991) so that while baseline stability was measured, transition from the A to the B phase was preset regardless of the level of baseline stability. The final parameters for acceptable baseline were (a) a stability envelope of 80% of the data points falling within 20% of the median level of all data points (D. L. Gast & Spriggs, 2010), and/or (b) the baseline trend moving opposite that predicted for the treatment phase (Dugard, 2012). Researchers analyzed trend at baseline and trend lines during and after treatment using a graph displaying the CSI-4 scores across both phases (Spriggs & Gast, 2010). In addition, researchers used nonoverlap of all pairs (NAP) for effect size (Parker & Vannest, 2009; Vannest, Parker, & Gonen, 2011). In general, NAP effect sizes have their own range (different from other effect sizes, particularly those used for larger samples, such as Cohen's *d*). The following are the ranges for NAP: small 0–.65, medium .66–.92, and large .93–1.0 (Parker & Vannest, 2009). Researchers used Microsoft Excel and an online calculator for NAP.

Results

Visual Analysis within Baseline Phase

Figure 1 shows the satisfaction scores across the baseline and intervention phases (Carr, 2005; Dixon et al., 2009). Scores for C1 included the median of 14.50, and the stability envelope was 13.05 to 15.95. Scores were 16.50, 14.50, and 13.50. The first data point, 16.50, was out of range, which suggests a lack of stability. However, the trend was decelerating, and thus opposite the predicted trend for the treatment phase, so the baseline was not problematic.

Baseline data for C2's satisfaction was stable, falling within 80% of the median stability window. The median was 18.50; the stability envelope range was 16.65 to 20.35. Scores were 17.50, 19.50, and 18.50. All scores before the intervention fell in the stability envelope. Baseline trend was accelerating.

Baseline data for C3's satisfaction scores was stable. The median was 16.50 and the stability envelope range was 14.85 to 18.15. The three scores before intervention fell in the sta-

bility envelope (15.50, 16.50, 18.00). Baseline trend was flat, zero-celerating.

Visual Analysis across Baseline and Intervention Phases

C1's last satisfaction score before MC was 13.50. The score after the first session was 15.50, showing an increase in satisfaction after assessment. The score after the second session was 15.50, showing a continued increase in satisfaction from the last baseline point. One week after the intervention, satisfaction was up with a score of 17.00. The change in trend also reflected a positive change—trend during and after the checkup showed improving (accelerating) satisfaction compared to trend in the baseline phase, which was decelerating.

C2's last satisfaction score before checkup was 18.50. The score after the first session was 17.50, showing a drop in satisfaction after the assessment session. The score after the second session was 18.00, showing again a satisfaction rating lower after the feedback session than the week before the checkup. One week later, satisfaction was again at 18.00. Change in trend reflected this mixed finding, shifting from improving (accelerating) before the checkup to still accelerating but less positive in slope during and after the checkup.

For this couple, C2, although the results could show that the couple had a negative response to the checkup, the two weeks prior—which was their peak score of 19.50—was the week they were on their honeymoon. Also two weeks previously, during the non-probe period, C2 married. In single-subject design, life events are examined for their impact on an intervention—a benefit of the small sample size in single-subject design. For this couple, their wedding and honeymoon were confounding variables, and as a result, and the impact of the checkup on their overall well-being is difficult to determine. This couple's result suggests the need for further research rather than a failed intervention.

C3's last satisfaction score before checkup was 18.00. The score after the first session was 18.00, showing stable satisfaction after the assessment. The score after the second session was 19.00, showing higher satisfaction after the checkup compared to the last baseline point. One week later, satisfaction went up to 19.50, an increase from the last score before the checkup. Comparing the trendlines between baseline and intervention, the intervention trendline showed an accelerating or positive slope, a change from a stable or zero-celerating trendline. This shift in trendline and baseline scores showed improving satisfaction.

Intervention scores compared to the last baseline score yielded multiple results. These results included the following:

1. Visual analysis showed for C1 and C3 an increase in satisfaction after the checkup
2. C2 showed a decrease in satisfaction

3. Visual analysis of trend showed improvement in satisfaction for C1 and C3 after the checkup, and a slightly less positive slope of improvement for C2 after the checkup

In single-subject design, the result of two out of three subjects showing a positive impact suggests that an intervention may not have a positive impact (Kratonchwill et al., 2012). However, the mitigating factors related to C2 suggest that the intervention could have a positive impact for gay male couples, albeit not on satisfaction itself for the newly married. Further research must be done with newlywed and engaged couples.

Effect Size and NAP

C1 had a NAP score of .78 and the effect size was moderate. C2's NAP score was .40, which was a decline in satisfaction. C3's NAP score was .96, a large effect size. For all three couples, NAP was .73. Thus, overall, the intervention had a medium effect size.

Discussion

Researchers sought to answer the research question “What is the impact of a relationship wellness checkup upon relationship satisfaction for gay male couples?” The statistical analysis using NAP shows that the intervention had a moderate effect size overall. In examining each couple individually, one couple had a large positive effect size, one had a moderate positive effect size, and one had a small negative effect size. Visual analysis supported this result.

In regard to C2's negative effect size, as noted, the couple's marriage and honeymoon during the baseline phase likely influenced the outcome. This hypothesis is supported by research with a different wellness program, relationship education (Buzzella et al., 2012), studied with a population of newlywed and engaged gay male couples. Buzzella et al. (2012) measured several dependent variables and though the intervention had no impact on relationship satisfaction, positive changes occurred on other variables and couples reported high satisfaction with the program. The researchers noted generally high satisfaction for engaged and newlywed couples as a likely reason that satisfaction did not improve while other variables did (Buzzella et al., 2012).

In this study, the couple noted that their marriage came after seven years together and within two years of marriage becoming legal in their state. Their ceremony was an important event, and both partners noted in the checkup that their decision to marry was deeply meaningful for them and for their community of friends. Both partners in C2 reported, subjectively, that the checkup was helpful to them and that they enjoyed the process. In addition, their screening score was 16. As noted previously, their score on week one of this study was 17; the three probes (after the marriage and

during the honeymoon) were 17.5, 19.5, 18.5. The scores during and after the checkup were 17.5, 18, 18. These three scores were higher than both their screening score and their first baseline score, although lower than their scores after marriage and honeymoon. Thus, results for this couple may be consistent with the relationship education study with engaged and newly married gay male couples. Because these results are inconclusive, additional studies are needed, and should include variables other than relationship satisfaction in order to understand this outcome with a newlywed couple. Wellness interventions such as checkups and education programs are used frequently for premarital couples. Studies using the checkup with gay male premarital and newlywed couples, with a range of dependent variables, will help to determine whether a checkup, similar to a relationship education program, has benefits for this group. The concern lies in reliance on satisfaction assessment to determine an effect during a time when satisfaction is generally high. Being newlywed or engaged was not a screening criterion for this study, and this outcome is informative for future studies.

As previously noted, the MC's mechanism of change for heterosexual couples is time spent fostering intimate conversations (Cordova et al., 2005). Additional factors in outcomes include reminding partners of the positive qualities of their relationship, building acceptance, and helping couples activate resources to support their own well-being (Cordova et al., 2014). Because couples are more similar than different across sexual orientation differences (Gottman et al., 2003; Julien et al., 2003; Mackey et al., 2004), the positive outcomes for two of the couples in this study are, at least in part, likely related to these same interpersonal processes.

The moderate effect size overall, which includes all three couples' scores, is stronger than the small effect sizes found in other studies on other wellness programs. The existing studies included one using the MC with heterosexual couples and another using a relationship education program with gay male couples. Both programs had a small effect size on satisfaction (Cordova et al., 2014; Whitton et al., 2016). As noted, another education program with newlywed and engaged gay male couples showed no change in satisfaction (Buzzella et al., 2012). Given that only two of the three couples in this study had a visible benefit, and given the small sample size for this study, additional studies need to be completed to explain the relatively strong results for two of the three couples.

Study designs contain strengths and limitations. The multiple-baseline design used provided a means to assess several threats to internal validity. Baseline data taken before the intervention and the short time of the study reduced threats related to maturation. Each couple had different randomly-assigned baseline lengths, which allowed for an assessment of threats related to history. A multiple-probe assessment with a short survey decreased the threat of testing. Researchers assessed procedural validity via fidelity

checks.

Limitations

The study was changed from a concurrent design to a non-concurrent design due to one couple not completing the study in the original set of three couples. The decision to change the design and recruit one more couple was supported by the minimal difference between concurrent and non-concurrent designs. Christ (2007) evaluated both design formats and indicated that both formats provided reliable assessment of threats to internal validity. In addition, in the larger series of studies of a checkup with lesbian, gay male, and transgender couples (Minten & Dykeman, 2018, n.d.), the researchers shifted to a non-concurrent design for this study group, gay male couples, and transgender couples. For the study with transgender couples, final recruitment for three couples took over a year, so researchers shifted to a non-concurrent design so that the couples who enrolled initially could have the checkup without a long delay (Minten & Dykeman, n.d.). Future researchers working with a checkup and sexual and gender minority couples may utilize a non-concurrent design from the start given the changes in two of these three studies.

Single-subject design studies frequently rely on direct measures of behavior rather than self-report inventories. In this study, the use of a self-report measure reflected standards in the field of couples research. As discussed above, self-reported satisfaction correlates strongly with other health outcomes and with predicting couples' long-term outcomes such as divorce or continued happiness. Even with these advantages, self-report measures are still subjective. Future studies may include direct observational measures of behavior change (such as observed increases in fondness and admiration, information about increases or decreases in time spent together, or reduced occurrences of criticism, contempt, and defensiveness in conflict discussions) in addition to a self-report measure of satisfaction.

Replication studies strengthen external validity in single-subject design. Additional studies with gay male couples are important to fortify the integrity of the findings. In particular, studies using the same intervention but in different geographical areas with different therapists will strengthen the generalizability of the results. Exploring the MC with additional dependent variables with a group of newlywed and engaged gay male couples will clarify results found here.

Future Directions

There are three primary implications for future researchers and for clinicians. First, in terms of future research, measuring satisfaction alone is not enough to understand the checkup's impact. Many couples have stable satisfaction scores and are still at risk. Underscoring this concern, as found in this study, newly married gay male couples may benefit from a checkup, but the potential benefits are unclear

when using satisfaction as the dependent variable. Other variables that may be more useful in wellness research in general (for all couples) include felt acceptance, intimacy, empathy, commitment, and time spent together (Bradbury & Lavner, 2012; Cordova et al., 2005, 2014; Hawrilenko, Gray, & Córdova, 2016). For gay men, additional variables are worth consideration. In one study with a relationship education program, observed communication and perceived stress had greater changes than satisfaction (Whitton et al., 2016). Researchers continue to tease out constructs relevant to ongoing wellness and sensitive to early intervention. Future research is needed to explore which of these variables fit for gay male couples overall, and for newlywed and engaged gay male couples, specifically with checkups.

Another topic to consider in future research is whether the checkup and other wellness programs might be helpful in countering the impact of social prejudice for gay male couples. Hardship (e.g., homophobia) can drive an increase in relational difficulties and thus result in early dissolution (Kurdek, 2004; Lavner & Bradbury, 2017; Meyer & Wilson, 2009; Pregulman et al., 2011). The MC could potentially provide an antidote to these concerns. Additional modifications to the MC can be made to meet concerns of gay male couples, such as adding questions to the surveys on topics specifically created for sexual minority couples. These topics, informed by previous research, could include (a) coping with discrimination and prejudice, (2) garnering social support, (3) defining and managing roles, (4) handling relationship disclosures, and (5) working on family planning (Buzzella et al., 2012; Scott & Rhoades, 2014; Whitton & Buzzella, 2012).

The third implication for future research and current providers includes exploring the challenge of attendance (Markman & Rhoades, 2012). In this study, recruiting four couples took approximately 10 months. Reframing the intervention as a wellness program and offering financial incentives helped in recruiting couples. Offering a same-day checkup at community events, encouraging word-of-mouth, and other strategies may also increase interest. In addition, all three couples in this study were middle class. Recruiting poor and working class couples will be vital to understanding gay male couples across demographics.

Using the MC with gay male couples was unlikely to harm, given that gay male couples are more similar to than different from heterosexual couples. Yet, a study with targeted analysis on how a checkup impacts gay male couples has been overdue. This small study offers initial support for two of three gay male couples for whom an MC checkup was beneficial. For the newlywed couple, results are less clear, but in the context of existing research with relationship education with newlywed gay male couples, are still hopeful. This study marks a beginning and demonstrates the potential for benefits in developing sensitive checkup programs that

enhance gay male couples' health and longevity.

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