

IMPLEMENTING THE SYSTEMATIC COLLECTION OF SEXUAL ORIENTATION AND GENDER IDENTITY INFORMATION IN A COMMUNITY MENTAL HEALTH SETTING

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ABSTRACT

Kate L. Slotwinski: Implementing the Systematic Collection of Sexual Orientation and Gender Identity Information in a Community Mental Health Setting
(Under the direction of Noreen Esposito).

BACKGROUND: Sexual orientation and gender identity (SOGI) information is becoming part of client demographic information collected in many healthcare settings. Inclusion of these data with regularly collected demographic information is becoming mandatory for compliance with federal programs. Collecting SOGI information is not always easy to implement and requires customization to a particular healthcare institution's processes.

METHODS: This quality improvement (QI) project included establishing SOGI questions in a standardized format, client surveys for feedback, an educational intervention with staff, and simple quantitative analysis with *t* tests.

IMPLEMENTATION: This QI project used the Plan Do Study Act (PDSA) method of planning and implementing change. The SOGI questions were introduced at a single outpatient mental health clinic of a statewide private, not-for-profit agency in the southeastern United States. This project consisted of four complete PDSA cycles, with unique changes to the collection process between each. These included informational statements on client forms, ongoing supervised and unsupervised data collection at the clinic, and a staff training regarding both the collection of SOGI data and serving the LGBTQ community in outpatient care.

RESULTS: PDSA Cycle 3 to PDSA Cycle 4, which consisted of an education intervention for staff, showed the most consistent *t*-statistics. All questions have effects going in the appropriate direction and three results were statistically significant with *p* values < 0.05. These results

indicate that the staff training was successful in improving the client experience answering SOGI questions. The pilot program established an effective model for implementing SOGI questions in this setting and will gradually be expanded to local clinics, then to the entire state-wide agency.

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To my family and friends for their endless support, to my husband for his strength and his courage to live authentically, and to our community for giving misfits like me a home and a purpose.

TABLE OF CONTENTS

LIST OF TABLES	viii
LIST OF ABBREVIATIONS.....	ix
CHAPTER 1: Introduction	1
Purpose.....	2
Overview.....	2
Quality Improvement	3
CHAPTER 2: Literature Review	4
Mental Health and Substance Abuse	4
Healthcare Disparities	6
Larger Healthcare Context.....	6
LGBTQ Patients and the Electronic Health Record	7
Lippitt’s Phases of Change	9
Plan Do Study Act (PDSA)	9
CHAPTER 3: Methodology.....	11
Lippitt’s Phases of Change	11
Plan Do Study Act (PDSA)	12
Setting	13
People.....	14
Measures	15

Process	16
Study of Process.....	17
Analysis Plan	17
Ethical Considerations	18
CHAPTER 4: Results	20
Engagement.....	22
Statistical Results	22
Contextual Elements and Unexpected Consequences	25
Missing Data	26
CHAPTER 5: Discussion.....	27
Summary	27
Interpretation.....	27
Limitations	28
Future Implementation.....	29
APPENDIX A: Sexual Orientation and Gender Identity Questionnaire	30
APPENDIX B: Survey Questions.....	31
APPENDIX C: Revamped SOGI Questions.....	34
APPENDIX D: Tables of Data Findings	35
REFERENCES	38

LIST OF TABLES

Table

1. PDSA Cycle Overview	35
2. <i>t</i> test Results	37

LIST OF ABBREVIATIONS

EHR	Electronic Health Record
HITECH	Health Information Technology for Economic & Clinical Health
IHI	Institute for Healthcare Improvement
IT	Information Technology
LGBTQ	Lesbian Gay Bisexual Transgender & Queer
MLBHC	Monarch's Lincolnnton Behavioral Health Clinic
PDSA	Plan Do Study Act
QI	Quality Improvement
SOGI	Sexual Orientation/Gender Identity
SOGI-Q	Sexual Orientation/Gender Identity Questionnaire
SOGI-QR	Sexual Orientation/Gender Identity Questionnaire Revised
USDHHS	United States Department of Health & Human Services
WPATH	World Professional Association for Transgender Health

CHAPTER 1: Introduction

Sexual orientation and gender identity (SOGI) are unique individual characteristics that influence health behaviors, community experiences, and interactions with healthcare providers (Zelle, 2015). SOGI information is personal and highly sensitive. It is obtained in healthcare settings through self-disclosure. For sexual minorities including lesbian, gay, bisexual, transgender, and queer (LGBTQ) persons, this information can be stigmatizing. Its disclosure can lead to negative experiences with family, community, and in healthcare settings. For these reasons, patients may be reluctant to disclose this information, and, without prompting, a provider may not ask. Knowledge of a patient's sexual orientation and gender identity is necessary for a fuller understanding of their lives and of their behaviors and experiences that can influence their health.

In the current healthcare climate, there is an increasing focus on the systematic collection and storage of data. This has led to various mandates from federal bodies and regulatory agencies for the use of electronic health records (EHRs) (USDHHS, 2017). SOGI information is the type of data these entities want systematically collected and stored for the purpose of more complete individual patient care, as well as for informing the future of healthcare policies and programs. Introducing a standardized, systematic collection of SOGI data will help meet that federal mandate while simultaneously increasing access to critical information that can be used during healthcare encounters.

Purpose

The purpose of this DNP quality improvement project was to implement, assess, and adapt an effective and evidence-based method for collecting and storing patient sexual orientation and gender identity information in a clinical setting in order to increase the rate of SOGI information in the EHR and increase resources supporting patient-centered care. The specific aims of the project were to introduce three new SOGI demographic questions to existing information-gathering practices, to provide an educational intervention around LGBTQ sensitivity for agency staff, and to monitor feedback on the question-asking experience to evaluate and adjust the process. These aims align with the quality improvement process, more specifically with the format of the PDSA model.

Overview

This DNP QI project introduced the gathering and storing of sexual orientation and gender identity (SOGI) information on individual patients in a community mental health setting. This procedure makes SOGI information more accessible to clinicians and brings the agency into compliance with mandated regulatory guidelines. The project setting was a single outpatient clinic that is part of a larger nonprofit, community-based mental health agency serving 44 counties in North Carolina. The project was guided by Lippitt's Phases of Change theory and utilized the Plan Do Study Act model for quality improvement (Lippitt et al., 1958; Institute for Healthcare Improvement, 2017). This quality improvement (QI) project plan was a single component of an agency shift that was already underway to redesign their electronic health record (EHR) for maintaining regulatory compliance as well as the pursuit of agency accreditation by The Joint Commission. The Joint Commission is a nonprofit accrediting and certifying body whose recognition indicates high quality healthcare (www.jointcommission.org).

The implementation of this project required the buy-in and cooperation of lead clinical and information technology agency staff.

Specifically the project was designed to introduce and refine a method of collecting and storing SOGI data that complies with current national electronic health record (EHR) regulations. This was done by introducing three new demographic questions to the existing intake paperwork at the clinic. Information technology (IT) staff and clinical leaders helped determine and implement fields to input and store this information in the existing EHR. Cycles of the Plan Do Study Act (PDSA) process for quality improvement (Institute for Healthcare Improvement, 2017) were utilized to implement, evaluate, and change the collection process until it met with the approval of patients and yielded a consistent response rate. Implementing the collection of SOGI data aids in the provision of high-quality, patient-centered care. It also allows the agency to conform to up-to-date guidelines from governmental regulating bodies as well as healthcare quality agencies such as the United States Department of Health and Human Services, Centers for Medicare & Medicaid Services, and The Joint Commission.

Quality Improvement

The quality improvement model was used to guide this project in the implementation of asking SOGI questions in an efficient, secure, therapeutically appropriate, and respectful manner in a single clinical setting. The project is considered a pilot quality improvement project for the agency. In the quality improvement format, all processes and outcomes are evaluated and addressed (USDHHS:HRSA, 2011). Information gathered from the project and changes made to the asking process were reported to executive staff and will inform how the asking of SOGI questions is implemented at all other agency sites in the near future.

CHAPTER 2: LITERATURE REVIEW

The review of the literature for this project was organized according to the following topic areas: mental health and substance abuse issues in LGBT populations; healthcare disparities affecting the LGBT population; changes in the larger healthcare context; and LGBTQ patients and electronic health records. The literature reviews were completed by searching CINAHL, Pub Med, and PsychINFO for articles using different combinations of the following key words: “lgbt*,” “mental health,” “disparit*,” “healthcare,” “SOGI,” “patient-centered,” “medical record*,” and “electronic record.” Sections of the review had to be updated on an ongoing basis as the proposal process developed to allow for the inclusion of the most up-to-date information. The initial searches yielded over 1500 articles that were included based on the criteria of being research articles, being written in English, and being from the past five years. Some landmark studies older than five years were included. Duplicates and articles not from academic journals were also removed, leaving 84 articles to be reviewed. The information from these articles is summarized below.

Mental Health and Substance Abuse

LGBTQ individuals, just like any minority population, can have specialized and specific health problems and needs. It has been well documented that lesbian, gay, bisexual, transgender, and queer (LGBTQ) populations experience higher rates of both mental health problems and substance abuse issues. In LGBTQ youth specifically, there is a higher prevalence of mental disorders such as conduct disorder, major depression, and post-traumatic stress disorder (Mustanski et al., 2010). Their increased risk can sometimes be as high as threefold. In LGBTQ

adults, data show increased risk of depression, anxiety, panic, post-traumatic stress disorder, and eating disorders (King et al., 2008; Brown & Jones, 2016).

The data that get the most attention and is the most striking is on suicidality in the LGBTQ population. The LGB minority population is twice as likely to experience suicidal ideation and are two to four times more likely to attempt suicide than their heterosexual peers (King et al., 2008). In transgender populations this risk is even higher, with a threefold increase in suicidal ideation and attempts and in non-suicidal self-harm (Reisner et al., 2015).

Rates of substance abuse are higher in the LGBTQ population as well, which parallels overall higher rates of risk-taking behaviors. Rates of tobacco and alcohol use are higher in the LGBTQ population than in the general population (Clarke & Coughlin, 2012; Hatzenbuehler et al., 2008; Roxburgh et al., 2015). Transgender populations again show even more serious and severe disparities, with much higher rates of polysubstance abuse as well as co-occurring disorders (substance abuse alongside major mental illness). Co-morbidities and co-occurring disorders require more complex treatment and are correlated with worse prognoses in the recovery process (Benotsch et al., 2013).

Discrimination and victimization are contributing factors to these higher rates of mental illness and substance abuse. This has been well-documented, in particular, in relation to increases in substance abuse. Hatzenbuehler et al. (2010), Huebner et al. (2015), and Reisner et al. (2015) found correlations between increased societal stigma or discrimination and increased use of alcohol and drugs in LGBTQ populations. Increased institutional discrimination during the years of states' same-sex marriage bans was correlated with a 41.9% increase in alcohol use disorder in the national LGB population. This increase was only seen in LGB people living in states with marriage bans; it was not seen in non-LGB people living in those same states (Hatzenbuehler et

al., 2010). Individual experiences of discrimination and victimization in the form of school bullying are also correlated to more severe substance abuse in adolescent LGBT populations (Huebner et al., 2015). The stress and stigma of accessing and interfacing with healthcare has also been shown to increase problematic alcohol use in transgender populations as a method of coping (Reisner et al., 2015).

Healthcare Disparities

The LGBTQ population experiences significant healthcare disparities on the basis of their identities that can impact their access to and pursuit of healthcare services. These disparities can range from higher rates of healthcare system avoidance to individual experiences of being outright denied services due to one's sexual orientation or gender identity. Perceived stigma and fear of negative experiences in healthcare settings are associated with delays in seeking preventative care. Even when sick or injured, almost 33% reported delaying needed medical attention (Reisner et al., 2015). This makes them twice as likely as non-LGBTQ adults to delay or avoid care (Zelle & Arms, 2015). From 10.0-14.1% of LGBTQ individuals report being mistreated in healthcare settings or even being refused service (Mattocks et al., 2015; Reisner et al., 2015). These negative experiences lead to an anticipation of more stigma, thus perpetuating healthcare avoidance (Reisner et al., 2015).

Larger Healthcare Context

Healthcare in the United States is controlled and influenced by particular governmental and quality assurance bodies. The agency involved in this QI project must be placed in the context of the current healthcare climate and how it impacts care provision. The agency is subject to various regulating bodies, just like all private, not-for-profit institutions. The agency accepts Medicare, Medicaid, and other state and federal monies for providing services to the

community. These regulating bodies have been slowly bringing more attention to LGBTQ patient populations and their health over the past eight years. Most notably, the Department of Health and Human Services made LGBTQ health one of its aims for Healthy People 2020. The aim consists of acknowledging the LGBTQ population's vulnerability to disparities, trying to create culturally sensitive treatment environments, and encouraging the systematic tracking of SOGI data to allow for better understanding of this population's healthcare needs (USDHHS, 2014).

The Joint Commission is a healthcare organization accrediting body whose endorsement signifies high levels of both safety and quality care. The agency implementing this project was recently audited and successfully accredited by this group. The Joint Commission released a field guide in 2011 called, "Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care for the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community." The purpose of this field guide is to aid healthcare organizations in understanding that patient-centered care techniques must be applied to the LGBTQ population and that their specific needs must be addressed to provide the highest quality healthcare. The Joint Commission encourages modifying policies or integrating new policies that address the LGBTQ population's unique healthcare needs. These recommendations even specifically address the issue of forms being gender neutral to allow for self-identification, as well as the need to collect LGBT-relevant information during and/or prior to the health encounter (The Joint Commission, 2011).

LGBTQ Patients and Electronic Health Records

The agency has been utilizing an electronic health record (EHR) for the past six years. Use of this system has had to adapt to changing parameters. The introduction of legislation to

push health information technology forward began in 2009 with the Health Information Technology for Economic and Clinical Health (HITECH) Act. The section of this act that impacts daily practice is called Meaningful Use. Meaningful Use is the inclusion of certified electronic health records for care provision with the ultimate goals of improving information exchange and increasing quality of care (USDHHS, 2017). These requirements are incentivized by impacting how healthcare organizations are reimbursed by Medicare and Medicaid. Organizations must follow certain guidelines for use of the EHR or be penalized by reduced reimbursement. Stage 3 of Meaningful Use, which began to roll out in 2017 and was fully mandated in 2018, requires certified EHR's to include demographic fields for SOGI data. The USDHHS views this as an important first step in beginning to address healthcare disparities in this population (USDHHS, 2017; Cahill et al., 2016).

The agency in question currently utilizes an electronic health record, into which all encounters and most patient information are charted directly. What is not yet able to be entered digitally is completed on paper, then scanned into the system. These electronic documents are attached to each individual patient's record via a secure electronic database called Image Silo. The agency currently has no systematic means of collecting or storing SOGI data, electronically or otherwise. The agency actively adapts and modifies its EHR to stay in compliance with the HITECH Act and Meaningful Use and keeps all staff, including direct care staff, up to date on those changes as they roll out for general use. The IT and clinical departments at the agency had currently rolled out changes that address the full requirements of Meaningful Use Stage 2 and partial requirements of Stage 3. At the time of the project, it did not include the collection and storage of SOGI data in the EHR.

Lippitt's Phases of Change

This DNP quality improvement project was guided by Lippitt's Phases of Change Theory and the Plan Do Study Act (PDSA) model (Lippitt et al., 1958; Institute for Healthcare Improvement, 2017). The Phases of Change Theory, drawn from the field of business, was developed by Lippitt, Watson, and Westley in 1958. Their model was an expansion of Kurt Lewin's three-step change process, introduced in 1951. Lippitt's Phases of Change Theory consisted instead of seven steps and focused more heavily on a change agent as the primary influencer of a planned step-wise change. The change agent could be an individual, a team, or an organization. The seven steps help to root the proposed change in the larger system by trying to spread the ideology or the processes of the change to adjacent systems. This promotes sustainability (Lippitt et al., 1958; Mitchell, 2013).

The seven steps of Lippitt's theory are diagnosing the problem, assessing motivation for change, assessing the change agent's motivation and resources, selecting progressive change objectives, choosing the appropriate role of the change agent, maintaining the change, and then finally terminating the helping relationship (Lippitt et al., 1958). How these steps were applied to this DNP project are discussed further in the next chapter.

Plan Do Study Act (PDSA)

The Plan Do Study Act (PDSA) model was developed in the early 1950s by Edward Deming. Deming based his model on the Shewhart Cycle that was created by Walter Shewhart in the late 1930s. Both men were inspired by traditional forms of the scientific method and inductive learning (Moen, 2010). Shewhart's version of the model only had three steps, while Deming added the fourth step (assessment of outcomes), thus informing the next production cycle. The current four step version of the cycle has been identified by the Health Resources and

Services Administration (HRSA) as an evidence-based model for implementing and assessing change in healthcare systems (USDHHS, 2011). The PDSA model has become more widely available through the Institute for Healthcare Improvement (IHI), which promotes its use for accelerated and practical change in healthcare systems. The PDSA model consists of repeated PDSA cycles, with each cycle improving on the last one. This allows for a targeted change to be assessed for its desired effect and adjusted as needed during the improvement process, thus increasing the likelihood of success. The model is used to implement and test change on an identified change target. The information gathered from the testing is then utilized to further improve the target. The new information is then implemented, and the cycle repeats. This allows for the refinement of change through an iterative process on a smaller scale with a pilot population until the process is deemed ready for dissemination on a grander scale (Institute for Healthcare Improvement, 2017). The PDSA format was ideal for this project and setting as it is focused on small-scale change that will later be disseminated to a larger population or institution, and it allows for flexible modifications to the interventions in an often nebulous clinical setting (USDHHS, 2011).

CHAPTER THREE: Methodology

Both Lippitt's Phases of Change and the PDSA model were used to guide this DNP project. The setting for the project, the people involved, and the measurement tools are discussed below. The processes within the project were guided by information gathered throughout. As with any iterative process, the project changed as more information was gathered and applied.

Lippitt's Phases of Change

The seven steps of Lippitt's Phases of Change theory were used to guide the DNP project. Lippitt's first step, diagnosing the problem, occurred prior to the formulation of this project. The LGBTQ population has been identified by regulating bodies as well as agency leaders as vulnerable and largely underserved by both statistical and clinical data. SOGI demographic information was not being collected at the Monarch's Lincoln Behavioral Health Clinic (MLBHC), but this was on the horizon as one of the mandated processes of Meaningful Use Stage 3 (USDHHS: CDC, 2017). Lippitt's second step requires assessing motivation for change in the MLBHC's leadership and employees. This was done through email, in person, and via telephone communications with clinicians, clinical leaders, and administrative leaders between August 2016 and September 2017. Those communications were unanimously supportive of the proposed practice change, commenting that it would keep MLBHC and its parent agency in compliance with regulations as well as best serve their more vulnerable populations. They saw value in implementing this change using quality improvement methods.

Lippitt's third step is assessing the change agent's motivation and resources. During the project I served as the change agent. I have been a psychiatric provider in a satellite clinic of this agency for the past four years and was highly motivated from both professional and personal

perspectives. I specialize in working with this population and am myself a member of the community. The most difficult resource to access during the planning of the project was the time and space to communicate effectively with top leadership in the agency. This did, however, improve as communications were returned and meetings were scheduled. The project gained momentum as it progressed into Lippitt's fourth phase of change: to identify a progressive change objective. The addition of SOGI questions to MLBHC's data collection process and EHR was identified by lead agency clinical and executive staff as important for quality improvement as well as patient-centered care. The addition of SOGI data collection and EHR integration as change objectives were also endorsed by the DNP project team at UNC Chapel Hill. I had already taken on the roles of expert and champion in regard to LGBTQ healthcare with my peers and direct supervisors at the agency (L. Leonard, personal communication, March 30, 2017). The hope was that these roles would translate to the wider scope of the agency as the project is disseminated beyond the pilot. Lippitt's final step is terminating the helping relationship between the change agent and the target. Since this is a QI project and the nature of quality improvement is ongoing, this step was more akin to a partial termination. I was no longer physically present at MLBHC to mentor staff and leaders, however I was still available via email and phone for answering questions. The density of resources and communication devoted to this project changed as the PDSA process established best practices. This allowed for that time and those resources to then be focused on other change targets.

Plan Do Study Act (PDSA)

Lippitt's theory of change integrates well with the PDSA design. The fourth step of Lippitt's theory involves selecting a progressive change objective. In this DNP project that objective is the introduction of SOGI questions into the data gathering process of the MLBHC.

This is the change target of the subsequent PDSA cycles. Lippitt's sixth step, maintaining the change process activities moving forward, overlaps with the repeated cycles of PDSA to create the most effective and sustainable change.

Setting

The agency for this DNP project is Monarch, a private, not-for-profit provider of mental health, substance abuse, and developmental disability services across the state of North Carolina. The setting for this QI pilot project was Monarch's Lincolnton Behavioral Health Clinic (MLBHC). MLBHC is a small, community mental health clinic in rural Lincoln County, NC, providing services to over 500 clients per year regardless of insurance coverage. The MLBHC is part of a "wellness center," a hub for multiple types of human services and agencies. The agencies that share the building with the MLBHC provide substance abuse treatment, intensive outpatient treatment, and youth support.

MLBHC is located off the main street of downtown Lincolnton in a large office building with free parking onsite. It is on a bus line and is completely accessible to those with mobility issues. Patients enter the spacious lobby and walk up to the front desk, where they are checked in by a referral coordinator who directs them to the relevant front counter staff of the agency they require. This project was completed only utilizing patients attending MLBHC.

The overall goal of this quality improvement project aligned with the agency's mission and goals. Their mission is to provide support to the people they serve through education and treatment and by empowering them to define, choose, and achieve their personal goals. The organization prides itself on the values of dignity, respect, being person-centered, embracing ability, equity, diversity, innovation, accountability, and a willingness of the staff to change, learn, and grow (retrieved from www.monarchnc.org/about-us/mission-vision-and-values).

Before and during implementation of the QI project, the agency was already increasing its focus on both cultural competency for its employees and meeting new standards of quality in an effort to receive Joint Commission accreditation (P. Terhune, CEO, personal communication, March 29, 2017).

People

The clients attending MLBHC are residents of Lincoln County, NC. They vary in age, race, and socioeconomic status. Many utilize MLBHC's services because they are free to those without insurance who are below a certain income bracket. Clients who attended MLBHC between December 16, 2017, and February 27, 2018, were given the SOGI questions upon check-in and offered the voluntary option of completing a survey about answering those questions in the clinic setting.

MLBHC's onsite staff consists of two clinical therapists, a physician's assistant, a medical assistant, a lead registered nurse, an intake coordinator, front desk support, and a practice manager who supervises the mental health portion of services at the center. I am a psychiatric nurse practitioner employed by Monarch, the clinic's parent agency. This established status provided initial access to the agency and allowed me to more easily share information regarding the topic and the proposed change target. Monarch administrative and executive staff were supportive of the project and its alignment with their agency goals. The practice manager at the Lincolnton office is a champion of the project and supports the goal of better serving the LGBTQ community in mental healthcare. My pre-established affiliation with the practice manager and some of MLBHC's staff helped my DNP project's integration into the processes of the clinic.

Measures

The SOGI questions are formatted using the model recommended by the Fenway Institute, a national leader in LGBTQ healthcare and research. Fenway's Health Education Center encourages other healthcare providers and agencies to use this format for both asking and documenting SOGI information (The Fenway Institute, 2015). The format consists of three questions (Appendix A). The first is a question regarding sexual orientation developed and tested by the Fenway Institute itself and found to have high levels of acceptability and comprehension in outpatient settings (Cahill et al., 2014). The second and third questions are recommended by the Fenway Institute as a standardized format for asking about and documenting gender identity. This format has been globally endorsed by the World Professional Association for Transgender Health (WPATH) (Deutsch et al., 2013). Besides face validity, the question format also carries construct validity as indicated by research done via The Fenway Institute showing that the SOGI questions were well comprehended across multiple populations (Cahill et al., 2014).

The satisfaction survey (Appendix B) was used to assess client's experience of the SOGI questions and the process of answering them in the clinic environment. These responses were used to inform the subsequent cycle of the PDSA process. This particular survey design was adapted from a study seeking to assess the comprehension, accuracy, acceptability, and perceived importance of the SOGI questions (Cahill et al., 2014). The Cahill survey tested well in a sample of over 300 patients attending outpatient clinics in diverse locations, with diverse agency missions, and with diverse populations (Cahill et al., 2014). The survey showed inter-rater reliability as it was administered by multiple researchers and outcomes compared. It also carries construct validity as similar types of Likert scale surveys are used successfully in the current clinic setting to measure patient perceptions of their care experience.

These measures were chosen due to their applicability and usefulness to the project as well as their affiliation with institutions and healthcare settings similar to the project agency. They have functionality and can be worked into the current structure of the patient experience at the clinic with very little disturbance of routine. This flexibility helps control for multiple variables including staff inexperience with the tools and the possibility of patients giving non-characteristic responses due to the stress of an altered clinic experience.

Process

The PDSA model for quality improvement provided the project structure. The model includes the steps of implementation, observation, and intervention adjustments, which were repeated in each of the project's four PDSA cycles. The cycles (see Appendix D, Table 1) of the process were documented, along with their interventions and their outcomes. In each cycle, the SOGI questions were provided via paper and pencil to all patients (new and established) coming to Monarch for an appointment (Appendix A). Once the individual completed and returned the SOGI questions, they were handed a survey about their experience filling out the SOGI form (Appendix B). Participants were informed verbally that the survey was entirely optional. The returned surveys were checked by the staff to make sure no identifying information was accidentally written on the pages, then placed into a locked submission box. I had the only key to the box. When the clinic was closed, the box was stored in a locked cabinet in a locked office for further security and confidentiality. At least once a week, I came to the site to empty the submission box, review the responses, log data appropriately, and then destroy surveys. The responses were then shared with the DNP committee chair, Dr. Noreen Esposito, who aided in formulating next steps and refining the next PDSA cycle.

The intervention (the “Do” stage) of the fourth cycle was pre-determined to be a staff training. It was designed to fit the template of other trainings done for agency staff and was to be attended by front desk, intake, clinical, and nursing staff of MLBHC. Half the training involved watching a webinar from The Fenway Institute’s LGBT Health Education Center (Makadon & Grasso, 2016), while in the second half the group discussed the material and how it applied to the SOGI implementation in the clinic. The focus of the training was on SOGI collection, accessibility of services, special needs of the LGBTQ community, and creating an identity-affirming environment in the clinic.

Study of Process

The use of the PDSA process for quality improvement gave structure to the project process that included steps in each of the four cycles for implementation (Do), observation (Study), and intervention adjustment (Act). During the implementation phases, some of the interventions were partially pre-planned to test methods for introducing SOGI collection at other clinics in the future, while other adjustments were fully based on responses from the surveys. The same survey was given out in every cycle of the project, and subsequent adjustments made to the SOGI collection process were thoughtfully planned in consultation with agency management and the project chair before being introduced to clinic staff and management during the next PDSA cycle. Given the nature of the PDSA process, all interventions cannot be planned ahead of time as the information gathered in process informs those interventions. As such, the steps of the process will be discussed concurrently with the results in the next chapter.

Analysis Plan

I used a simple interpretive approach to assess the survey results, contextual observations, and staff feedback through the cycles of the project. Field notes were also collected during each

cycle. They were dated and written out by hand in a small bound notebook at every visit to MLBHC, then reviewed after the visit. Some notes were also written after meetings with MLBHC's leadership, their staff, or the project chair. The notebook was available to me at all times for writing down information and referring to previous notes. Consultation with the committee chair occurred between cycles, especially as decisions were made about changes to the SOGI collection process for the next PDSA cycle. Impressions of the data and concerns such as potential bias were discussed at length to help minimize their effect on data interpretation.

The quantitative methods used to draw further information from the survey data were a group of non-paired t tests on each question through the four cycles of the project, done in consultation with Dr. Hugh Waters. This was used to determine whether the two sets of surveys differed in the means of the two unpaired samples. There was no way to guarantee that the samples in the four cycles included the same individuals, as this could not be tracked due to confidentiality concerns, so each t test's samples were considered unpaired. The four cycles were also of different lengths, as they often are when using the PDSA quality improvement format, therefore the samples were not of equal size. This required two sample t tests assuming unequal variance. The reported p values for statistical significance were for two-tailed t tests.

Ethical Considerations

The proposed project was reviewed by the UNC Chapel Hill Institutional Review Board and deemed to be a non-research QI project and therefore did not require IRB approval. This status meant that I could proceed with the project with cautions and protections as deemed appropriate by me and the project chair. I am a psychiatric nurse practitioner and an employee of Monarch. This could have represented a conflict of interest and could have led to confusion regarding my role when present in the clinic setting conducting the project. Thus, the pilot

project was implemented in a clinic where I do not see patients, minimizing any confusion or conflict of interest.

Confidentiality of all health-related information is very important. Steps were taken to ensure that no identifying information was on the survey results that I reviewed. Both the SOGI forms and the surveys were never taken out of the clinic building. The SOGI forms were scanned into patients' electronic charts and then destroyed. The survey responses were stored in an Excel spreadsheet with three-digit numerical participant identifiers and then destroyed. These steps were particularly important since the accidental disclosure of highly sensitive information such as sexual orientation and gender identity can affect employment, housing, relationships, and even physical safety (Zelle & Arms, 2015).

CHAPTER FOUR: Results

The QI project occurred in four rounds of PDSA cycles. Cycle 1 consisted of a single day to gather data and familiarize the staff with the SOGI collection process. The practice manager of the clinic, who was mentioned earlier as a champion of the project, was heavily involved supervising and supporting the data collection process in this first cycle. Eleven surveys were collected from clients on that first day. Impressions of those surveys after reviewing and logging them (see Appendix D, Table 1) showed a roughly 50% positive response to the SOGI questions and their collection. The other 50% had varying responses that indicated they perceived SOGI information not to be important for their providers to have. A subset of these responses expressed their discomfort with answering these types of personal questions on a registration form. Based on the initial first cycle responses, I added a statement to the SOGI form explaining the questions' significance and the potential importance this information has to the providers they may see in a healthcare setting (Appendix C).

PDSA Cycle 2 consisted of ongoing collection of SOGI data and surveys for a period of two weeks immediately following the first cycle. The change implemented in this cycle was the use of the updated SOGI forms (Appendix C). All other elements of collection were kept the same, including how the forms were distributed, collected, and stored, as well as the presence of the practice manager to support the frontline staff in data collection by reminding them to do so and helping to distribute forms. Forty-one surveys were returned in this two week period. Upon reviewing and logging the information, it appeared that a much smaller percentage, about 15%, felt SOGI information was unimportant for healthcare providers to have. This was a decrease of

about 50% from the first PDSA cycle (Appendix D, Table 1). The addition of the explanatory statement to the SOGI forms in cycle 2 may have contributed in part to the difference in responses from cycle 1. This cycle's two week collection process continued smoothly, giving the impression that the process was sustainable for the clinic in the presence of the practice manager.

PDSA Cycle 3 consisted of ongoing SOGI data and survey collection for an even longer time period (see Appendix D, Table 1). This cycle began immediately after the end of Cycle 2, so the collection process continued uninterrupted. The focus of Cycle 3 was the sustainability of the SOGI collection process without the direct supervision and support of the practice manager. During this five week cycle, 49 surveys were returned. The impressions after reviewing and logging the surveys were very similar to the impressions from the surveys in Cycle 2. The responses showed the same occasional issues with SOGI question comprehension, infrequent discomfort with answering such personal questions on a form, and low rates of belief that SOGI data are unimportant for healthcare providers to assess (Appendix D, Table 1).

Cycle 4 began with a planned staff training to aid the clinic staff in the SOGI collection process. This was the "Do" step in the PDSA cycle, since the "Study" step remained the same for assessment. This cycle was somewhat different, as the "Plan" was not directly influenced by the data from the previous cycle. It had been decided early-on that the quality improvement plan would include this staff training using the materials from The Fenway Institute's LGBT Health Education Center (Makadon & Grasso, 2016). The training was facilitated on a weekday during the time slot usually used for the monthly staff meeting. SOGI and survey collection continued for two more weeks after the training. In that final collection period, 27 surveys were returned. Upon review, the post-training surveys appeared to show an even higher response rate indicating SOGI question comprehension, understanding the data's importance, and positive feelings about

answering them in the clinic setting. Over 80% of the surveys in this two week period had all positive responses regarding their experience with the SOGI questions. Due to how well-received the training was with staff and how it appeared to have a positive impact on SOGI collection, it will likely be implemented on an agency-wide scale in the future.

Engagement

Field notes were taken by hand in a notebook during the project process to document observations throughout and between the four PDSA cycles. One of the notable observations that ran throughout all the field notes was staff and patient engagement. The pilot project was well-received at the clinic from the very first day of Cycle 1, when I was surprised to receive 11 surveys in a single day with a low to moderate caseload. Clients were more actively participating in the survey process than I had expected. During the entire duration of the project, which lasted two months and garnered about 150 returned surveys, I only received two that included handwritten commentary criticizing the topic of interest. As the satellite clinic is located in a more rural county farther away from metropolitan areas, I had anticipated much more of that sort of response to the content. The clinic staff was particularly enthusiastic about the training session. They listened actively and took notes during the webinar. They also had questions and spoke openly about their own and family experiences being LGBTQ and the varying discrimination faced as a result. The most promising point of staff engagement was their excitement to discuss the ways in which the training would help them better serve LGBTQ clients already attending the clinic.

Statistical Results

Unpaired *t* tests were run for each survey question comparing two cycles: Cycle 1 to Cycle 2, Cycle 2 to Cycle 3, Cycle 3 to Cycle 4, and an overall test on Cycle 1 to Cycle 4. The *t*

statistics and p values for each test run are listed in Appendix D, Table 2. Two-tailed t tests were used to allow the researcher to test for change in either direction between the variables.

In the analysis from Cycle 1 to Cycle 2, there were two questions whose t tests had a p value of less than 0.05, the threshold for statistical significance (see questions 1d and 4a in Appendix D, Table 2). Both of these results, however, have positive t test results. A positive value indicates the opposite direction for showing improvement from Cycle 1 to Cycle 2. Obviously, this was unexpected. One interpretation of these p values is that they are false due to the large variance in the sample sizes between Cycle 1 and Cycle 2.

Cycle 3 to Cycle 4 shows three t tests with p values less than 0.05. All three tests also have negative t test results (see Appendix D, Table 2). In fact, the t tests for every question comparing Cycles 3 to 4 have negative values. This consistency helps support those with significant p values in their validity. The questions that tested significant are 2a, 3c, and 4b (see Appendix D, Table 2). These questions address comprehension of the sexual orientation question, comfort answering gender identity questions in a healthcare registration situation, and understanding the importance of gender identity information for providers, respectively:

1. *In answering Question 2 (“What is your current gender identity?”), please let us know whether you agree or disagree:*

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
a. I understood what the question was asking about me.					

2. In answering Question 3 (“What sex were you assigned at birth on your original birth certificate?”), please let us know whether you agree or disagree:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
c. I would answer this question on a registration form at this health center.					

3. In answering the gender identity questions (which includes questions 2 and 3), please let us know whether you agree or disagree:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
b. I think this information is important for my provider to know about me.					

Survey questions adapted from the National LGBT Health Education Center: A Program of The Fenway Institute. (2014). Permission to reproduce for this DNP project granted by The Fenway Institute.

Interestingly, the *t* tests performed comparing Cycle 1 to Cycle 4 yielded no statistically significant results, though they again had mostly negative *t* test values (Appendix D, Table 2). This can also be attributed to the large discrepancy in the sample sizes between Cycle 1 (n = 11) and Cycle 4 (n = 27).

Contextual Elements and Unexpected Consequences

The site for the pilot SOGI collection was originally planned to be the clinic in which I work as a provider. The data collection would have been done completely independent of my paid work in the clinic, since the collection process occurred during front desk and/or intake interaction. In negotiations with the agency while trying to secure a contract for the project, it was decided that the agency did not want the project pilot to occur in my clinic of employment. This presented me and the team with the task of having to secure another clinic to host the pilot project. The project had been tailored from the beginning for my own clinic, so some logistics had to change as well to fit the new site. After discussing the situation with supervisory staff at the original clinic, another clinic in the region was approached about hosting the pilot. The practice manager of the alternate clinic is a strong proponent of patient-centered care and of equality for LGBTQ populations. She was enthused about the project from the very beginning.

One of the marked differences between the original clinic for which the project was prepared and the clinic at which it was implemented was the density of patient encounters in a given day or week. The original clinic was quite busy, seeing around 50 people per day for return visits and having as many as 10 new people per day starting at the clinic for services. At the new clinic site it was not uncommon to have an entire day with no new admissions. The original project plan had the SOGI question only being distributed to new clients during the intake process. Due to the significantly smaller patient population and flow at the alternate clinic, it was decided that the SOGI questions and surveys would be distributed to all clients attending the clinic for any services during the designated time period.

When picking the statistical method for analyzing the data gathered from the project, two sample t tests with unequal variance were used. While assuming equal variance is a somewhat

stronger statistical method, the samples in the four cycles were not intentionally paired (H. Waters, personal communication, December 19, 2017). There may have been clients who received the questions and survey in more than one cycle of the project, but due to confidentiality issues this could not be tracked. The PDSA structure for quality improvement often begins with its first cycle being only one day of implementation, which is then observed and analyzed to inform the next PDSA cycle. This first cycle being so much shorter than the subsequent cycles means that from the very beginning the samples will be of unequal variance.

Meaningful Use requires that collected SOGI information be securely stored in the EHR. A large agency like Monarch often has to implement change slowly. Despite planned changes to their EHR, the SOGI fields were not implemented before or during the data collection process. In fact, the fields likely won't be available in the current EHR until January 2019 (C. Thompson, personal communication, May 14, 2018). This means that the SOGI information collected on the 150+ individual clients during the course of the pilot project is only available via paper forms that have been scanned into the electronic record. Accessing this information poses many issues with maintaining confidentiality. At this time, the analysis was completed using the survey results, response rates, and staff feedback.

Missing Data

Out of 145 surveys, 17 surveys (11.7%) were either wholly blank or had missing answers. These were still recorded in the Excel file and double-checked as part of the data collection process. Working under the guidance of a health statistician, it was decided to perform the t tests on the data as unpaired t tests. While these are not as strong as paired t tests and don't control for as many other variables, they do allow for all the data to be used in the analysis, even the 11.7% with missing data.

CHAPTER FIVE: Discussion

Summary

The introduction of SOGI questions in the pilot clinic was largely successful as a quality improvement project. The process was standardized and adapted for sustainability among the staff while the paper forms and training seminar were tested and revised. The changes made and interventions put in place may have been related to the change seen in how clients responded to the SOGI collection process. Three areas that initially showed quite a bit of variance in client responses were comprehension of SOGI questions, comfort answering these questions at registration, and the perceived importance of this information to healthcare providers. These three areas showed statistically significant improvement by the time the fourth and final PDSA cycle was complete. The introduction of SOGI questions into an outpatient mental health setting can be done with minimal disruption when under the guidance of a knowledgeable change agent. If that change agent is already a part of the healthcare system in question, as I was already a part of Monarch, then this change can be implemented agency-wide with very little additional cost or disruption of current processes. As this was a quality improvement project, it was an “in house” effort. It was tailored to the agency at hand through a standardized process. This lends the project strength and validity for its intended purpose.

Interpretation

The statistical correlation between interventions and outcomes has a number of limitations resulting from the use of a less rigorous analysis method, unequal comparison groups, and the inability to track repeat encounters. However, the correlation is presented here to

indicate a possible trend toward acceptance of the question, its comprehension, and understanding its relevance to providers. PDSA QI projects normally use simple observation for data analyses (Moen, 2010). As stated before, the project is “in house,” so any generalizability outside the agency of origin is limited. That being said, an in-house QI project is not seeking statistical significance but is considered within the context of the project itself. The observed impact of implementation on the clinic appears to be largely positive. The collection process and the training sessions elicited a very positive response from staff.

Limitations

Many limitations of the project and its outcomes have already been mentioned, such as the inherent limitations due to its quality improvement design, its smaller-than-anticipated respondent pool (due to changing clinic sites), and the inability to access SOGI data electronically after the project was completed. The wide variance in sample sizes between cycles limited what could be done with the data statistically. A less rigorous type of *t* test had to be used in analysis. Many of the concerns regarding bias and validity are relevant to a goal of generalizability. These are not as important in the quality improvement design as they are in other project or research designs. They become even less important when using the PDSA QI design since the goal remains a moving target and the project must stay flexible. While the relocation of the project to a different clinic may have impacted the numbers available for sample sizes, it did help to minimize one of the limitations in the outcomes: Since the original clinic was the site at which I have worked regularly for many years, it and its staff have already had the influence of my focus on the care of the LGBTQ population. The outcomes from the alternate site used for the pilot give a better picture of the process’s and my impact on the site and clients without the confounding factor of prior contact.

Future Implementation

The implementation of SOGI questions is an upcoming requirement for the agency to stay in compliance with multiple organizations that impact accreditation and reimbursement. This pilot project has now provided the executive team with a viable format for rolling out those questions and implementing that process change in all outpatient offices. The project can easily be taken to outpatient sites across the state and implemented in a similar manner. In fact, the plan moving forward is for that to be the case. This project served as a pilot program for the agency, and I will remain on board to help with wider implementation. My existing role at the agency aids in sustainability and staff buy-in. In keeping with the PDSA model, as the project now spreads to other counties and offices it may encounter the need again for specialized changes. Since the process has already been done once and tested, it can easily be rerun at any site encountering problems with implementation of the SOGI questions. The next step in this project is the submission of results to the executive team, the clinical leadership, and the CEO of the agency. When appropriate, I will continue to spread the initiative state-wide for the agency.

APPENDIX A

Sexual Orientation and Gender Identity Questionnaire

Sexual Orientation and Gender Identity (SOGI) Questions

1. Do you think of yourself as:
 - a. Lesbian, gay, or homosexual
 - b. Straight or heterosexual
 - c. Bisexual
 - d. Something else, please describe _____
 - e. Don't know

2. What is your current gender identity? (check all that apply)
 - a. Male
 - b. Female
 - c. Female-to-Male (FTM)/Transgender Male/Trans Man
 - d. Male-to-Female (MTF)/ Transgender Female/ Trans Woman
 - e. Genderqueer, neither exclusively male nor female
 - f. Additional gender category/ (or other), please specify_____
 - g. Prefer not to answer

3. What sex were you assigned at birth on your original birth certificate? (Check one)
 - a. Male
 - b. Female
 - c. Prefer not to answer

Adapted from the National LGBT Health Education Center: A Program of The Fenway Institute. (2015). Open Access.

APPENDIX B

Survey Questions

1. *In answering the question about sexual orientation (“Do you think of yourself as:”), please tell us whether you agree or disagree:*

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
a. I understood what the question was asking about me.					
b. I understood all of the answer choices.					
c. The question was easy for me to answer.					
d. I would answer this question on a written registration form at this health center.					
e. The answer options allow me to accurately document my sexual orientation.					
f. I think this information is important for my medical provider to know about me.					

2. In answering Question 2 (“What is your current gender identity?”), please let us know whether you agree or disagree:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
a. I understood what the question was asking about me.					
b. I understood all of the answer choices.					
c. The question was easy for me to answer.					
d. I would answer this question on a registration form at this health center.					

3. In answering Question 3 (“What sex were you assigned at birth on your original birth certificate?”), please let us know whether you agree or disagree:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
a. I understood what the question was asking about me.					
b. The question was easy for me to answer.					
c. I would answer this question on a registration form at this health center.					

4. *In answering the gender identity questions (which includes questions 2 and 3), please let us know whether you agree or disagree:*

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
a. This set of questions allows me to accurately document my gender identity.					
b. I think this information is important for my provider to know about me.					

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APPENDIX C

Revamped SOGI Questions

Sexual Orientation and Gender Identity (SOGI) Questions

Answering these questions is completely voluntary. This information is kept confidential in your record. Your sexual orientation and gender are important parts of who you are and can better help us understand you as a whole and unique person.

1. Do you think of yourself as:
 - a. Lesbian, gay, or homosexual
 - b. Straight or heterosexual
 - c. Bisexual
 - d. Something else, please describe _____
 - e. Don't know

2. What is your current gender identity? (check all that apply)
 - a. Male
 - b. Female
 - c. Female-to-Male (FTM)/Transgender Male/Trans Man
 - d. Male-to-Female (MTF)/ Transgender Female/ Trans Woman
 - e. Genderqueer, neither exclusively male nor female
 - f. Additional gender category/ (or other), please specify_____
 - g. Prefer not to answer

3. What sex were you assigned at birth on your original birth certificate? (Check one)
 - a. Male
 - b. Female
 - c. Prefer not to answer

Adapted from the National LGBT Health Education Center: A Program of The Fenway Institute. (2015). Open Access.

APPENDIX D

Tables of Data Findings

Table 1. PDSA Cycle Overview

PDSA Cycle	Problem	Plan (P)	Do (D)	Study (S)	Act (A)
1: Surveys 001-013 (n = 11) 12/16/17	The agency is not collecting SOGI data, so they are not accessible to clinicians and staff for helping them provide quality care.	Collect SOGI data in an efficient, clinically useful, and respectful manner using three questions in the DHHS recommended format.	Single day collection of SOGI data (SOGI-Q) and surveys (S)	> 30% of S indicated that clients thought SOGI information wasn't important for providers to have (scores of 1 or 2 on questions 1f & 4b). Comprehension of questions – good Comfort answering on paper – good Lack of client knowledge regarding SOGI-Q's clinical significance	Written statement added to the SOGI-Q (now the SOGI-QR) explaining the importance of these data (see Appendix C)
2: Surveys 014-058 (n = 41) 12/20/17- 1/8/18	Can the pilot site sustainably collect SOGI-QR as part of their front desk/ demographic information update process?	Collect SOGI-QR continuously along with S. Clinic practice manager aids in the process' sustainability.	SOGI-QR collection and S distribution under supervision of the practice manager, for at least two weeks	15% of S indicated that clients thought SOGI information wasn't important for providers to have (indicated by scores of 1 or 2 on questions 1f & 4b). Comprehension of questions – good	Collection process proved sustainable for two weeks under the supervision

PDSA Cycle	Problem	Plan (P)	Do (D)	Study (S)	Act (A)
				Acceptable to > 50% of respondents.	
3: Surveys 059-114 (n = 49) 1/9/18-2/14/18	Can the pilot site sustainably collect SOGI-QR without direct supervision?	The pilot site needs to be able to sustainably collect SOGI data on clients as part of their front desk/ demographic information update process without direct guidance and supervision of the clinic practice manager.	The collection process continued outside of the direct supervision of the practice manager to observe sustainability and continue to collect client perceptions of the collection process.	> 50% of S indicated no problems with question comprehension, acceptability, or understanding of information significance to clinicians. SOGI collection was sustainable without direct supervision. Comments from front desk staff support sustainability without supervision	Collection process sustainable without supervision Training on SOGI information collection and working with specialized populations planned
4: Surveys 115-145 (n = 27) 2/15/18-2/27/18	Front line and direct care staff lack education on SOGI related issues that would aid them in collecting the SOGI data as well as creating an accessible and identity-affirming environment.	To increase knowledge and awareness of SOGI information and special needs of sexual and gender minority populations in healthcare	Face-to-face training for all front desk/ administrative/ direct care staff. Materials include standardized webinar and info specific to collection at clinic site. SOGI-QR and S collection for two weeks post-training.	> 80% of S indicated no problems with question comprehension, acceptability, and understanding of information's significance to clinicians. Observed sizable positive change in S responses post-training.	Training component will be used for spreading the initiative to agency clinics all across the state

Table 2. *t* Tests Results

Survey Question	Cycle 1 - Cycle 2	Cycle 2 - Cycle 3	Cycle 3 - Cycle 4	Cycle 1 - Cycle 4
1a	t(30) = 0.181, p = 0.857	t(93) = 0.259, p = 0.796	t(71) = -0.110, p = 0.913	t(31) = 0.302, p = 0.765
1b	t(35) = 0.815, p = 0.421	t(92) = 0.402, p = 0.689	t(75) = -0.957, p = 0.342	t(32) = 0.252, p = 0.803
1c	t(22) = 0.064, p = 0.949	t(93) = 0.545, p = 0.587	t(77) = -1.447, p = 0.152	t(20) = -0.619, p = 0.543
1d	t(41) = 2.864, p = 0.007 (Sheet 5)	t(90) = 0.318, p = 0.752	t(76) = -1.634, p = 0.106	t(28) = 1.361, p = 0.184
1e	t(51) = 1.201, p = 0.235	t(93) = 0.411, p = 0.682	t(78) = -1.889, p = 0.063	t(33) = -0.343, p = 0.733
1f	t(18) = -0.308, p = 0.761	t(79) = -1.267, p = 0.209	t(61) = -1.222, p = 0.226	t(17) = -1.642, p = 0.119
2a	t(18) = -0.190, p = 0.851	t(92) = 0.039, p = 0.969	t(60) = -2.052, p = 0.044 (Sheet 38)	t(13) = -1.242, p = 0.236
2b	t(31) = 0.957, p = 0.346	t(83) = -0.791, p = 0.431	t(75) = -0.760, p = 0.449	t(22) = -0.238, p = 0.814
2c	t(22) = 0.518, p = 0.609	t(92) = 0.184, p = 0.854	t(76) = -1.127, p = 0.263	t(21) = -0.216, p = 0.831
2d	t(38) = 1.520, p = 0.137	t(93) = 0.306, p = 0.761	t(79) = -1.703, p = 0.092	t(28) = 0.267, p = 0.791
3a	t(31) = 0.467, p = 0.643	t(92) = 0.423, p = 0.673	t(64) = -1.920, p = 0.059	t(15) = -0.724, p = 0.480
3b	t(32) = 0.462, p = 0.647	t(92) = 0.418, p = 0.677	t(67) = -1.685, p = 0.097	t(16) = -0.520, p = 0.610
3c	t(42) = 1.590, p = 0.119	t(86) = -0.187, p = 0.852	t(65) = -2.360, p = 0.021 (Sheet 44)	t(15) = -0.307, p = 0.763
4a	t(52) = 2.430, p = 0.019 (Sheet 15)	t(88) = -0.200, p = 0.842	t(75) = -1.599, p = 0.114	t(38) = 1.089, p = 0.283
4b	t(17) = 0.144, p = 0.887	t(83) = -0.477, p = 0.635	t(76) = -2.324, p = 0.023 (Sheet 46)	t(14) = -1.185, p = 0.256

Notes: Two-sample assuming unequal variance (unpaired) ($p < 0.05$); $t(df)$, df = degrees-of-freedom; t = t statistic, rounded to 3 decimal places where appropriate

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