Published in final edited form as:

JLGBT Youth. 2012 ; 9(2): 114–135. doi:10.1080/19361653.2012.649643.

Assessing Developmental Trajectories of Sexual Minority Youth: Discrepant Findings from a Life History Calendar and a Self-Administered Survey

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Abstract

Research suggests that the timing and sequence of sexual identity development milestones impacts myriad health and mental health outcomes for sexual minority youth. Because these milestone events are typically assessed retrospectively, traditional data collection approaches are limited by recall bias and lack of precision in the recording of milestone events, which may conceal the distinctions between events and distort the recording of youths' developmental trajectories. The purpose of this exploratory study was to compare responses to questions about psychosexual milestones elicited by a Life History Calendar and a self-administered survey. Results indicated discrepancies in the reported occurrence and timing of milestone events between the survey and Life History Calendar. Differences in the timing of specific milestone events ranged from two months to 15 years. Implications of these discordant findings for sexual minority youth are discussed.

Keywords

Life History Calendar; sexual identity development; sexual minority youth

The process of developing a non-heterosexual identity in a heterosexist society is a key factor in the lives of sexual minority youth (i.e., non-heterosexual and/or gender variant young people who may or may not self-identify as lesbian, gay, bisexual, or transgender; Elze, 2005). Research suggests that factors related to the development of these youths' sexual identities can impact a range of physical and mental health outcomes including internalized homophobia (Dube & Savin-Williams, 1999; Dube, 2000), suicide (D'Augelli, 2003; Savin-Williams & Ream, 2003), victimization (D'Augelli, 2003), and risky sexual behaviors (Dube, 2000). As a result, understanding the unique sexual identity development process of sexual minority youth is essential for developing culturally relevant and developmentally appropriate services for this population.

Researchers have approached the study of sexual identity development among sexual minority youth in several ways. One approach has examined the psychosocial factors that affect youths' navigation of a non-heterosexual sexual identity and their impact on health and well being. For example, Rosario, Schrimshaw and Hunter (2006) found that young sexual minority males with less favorable attitudes toward homosexuality had more sexual encounters and more unprotected sex. Findings from other studies have found that stressful life events resulting from youths' sexual identities (e.g., being ridiculed or victimized) have

a negative impact on mental health (Almeida, Johnson & Corliss et al., 2009; Rosario, Schrimshaw & Hunter, 2011) and risk of sexually transmitted infections (Russell, Ryan & Toomey et al., 2011) among GLB and GLBT youth, respectively. Studies investigating the impact of GLB youths' connections to or involvement with other sexual minority people have reported mixed findings. Wright and Perry (2006) found that having more GLB people in one's social network was related to more sexual risk acts (e.g., sex without a condom) and more sexual partners, while other studies have reported associations between greater involvement in gay and lesbian-related activities and lower substance use (Rosario, Schrimshaw & Hunter, 2004) and less unprotected sex (Rosario, Hunter, Maguen, Gwadz & Smith, 2001).

SEXUAL IDENTITY DEVELOPMENT TRAJECTORIES

Another approach has focused on the ways in which key stages or events during the sexual identity development process may impact similar health and mental health outcomes among sexual minority youth. Early sexual identity development models (Cass, 1979; Troiden, 1988) posited a set of stages that an individual passes through in the process of increasing awareness and acceptance of one's sexual identity. More recent research has examined the timing and sequence of psychosexual milestones, primarily first awareness of same-sex attraction, first same-sex sexual contact or experience, first self-labeling as non-heterosexual, and first disclosure of non-heterosexual identity to others (D'Augelli, 2003; D'Augelli, Hershberger & Pilkington, 2001; Dube, 2000; Savin-Williams & Diamond, 2000).

Previous research has typically reported the timing of these milestones in terms of mean ages for male, female or mixed samples of sexual minority youth. These studies report the timing of psychosexual milestones as ranging from 7.7–11.1 for first same-sex attraction, 13.1–16 for first same-sex sexual contact, 14.6–17.6 for first self-label, and 16.0–17.9 for first disclosure (D'Augelli, 1998; D'Augelli & Hershberger, 1993; Herdt & Boxer, 1993; Maguen et al., 2002; Rosario et al., 1996; Savin-Williams & Diamond, 2000). Despite the linear process implied by these aggregate findings, the timing of developmental milestones may vary considerably by sex (D'Augelli, 1998; Savin-Williams & Diamond, 2000) and race/ethnicity (Maguen et al., 2002; Parks, Hughes & Mathews, 2004; Rosario et al., 2001).

Studies by D'Augelli and colleagues reported that older age of self-labeling and younger same-sex sexual experience were associated with suicide attempts among sexual minority males (D'Augelli & Hershberger, 1993), and younger awareness of sexual orientation were related to more suicidal ideation among sexual minority females (D'Augelli, 2003). A more recent study, however, suggests that the timing of the self-labeling and disclosure milestones may be significant but less important predictors of suicidal behavior than other sexual identity development factors such as level of openness about one's sexual identity and gender atypical behavior (D'Augelli, Grossman & Salter et al., 2005). In their study of identity development and alcohol use, Parks and Hughes (2007) found that younger lesbians who reported questioning and disclosing their sexual identity at a younger age reported more alcohol related consequences and dependence symptoms, respectively. D'Augelli (2003) reported that young lesbian and bisexual identified women who self-labeled as non-heterosexual or disclosed their sexual identity at a younger age experienced more sexual orientation-based victimization.

The sequence of these developmental milestones may also have important implications for the lives of sexual minority youth. Maguen, Floyd, Bakeman, and Armistead (2002) examined variations in the order of three milestones (same-sex attraction, same-sex sexual contact, and disclosure), finding that different developmental patterns emerged among GLB

youth. One study investigating the sequence of milestone events among sexual minority youth found that developmental trajectories differed by sex: males were more likely to report a sex-first trajectory (i.e., self-label as non-heterosexual following same-sex experience) while females were more likely to follow a label-first trajectory (Savin-Williams & Diamond, 2000). A sex-centered developmental trajectory among sexual minority males may also be associated with greater sexual risk taking (Dube, 2000).

Given the impact of sexual identity development trajectories on these important outcomes for sexual minority youth, researchers have noted the need for more precise measures of the timing of milestone events as well as greater attention to milestone spacing and sequence (Maguen et al., 2002; Savin-Williams & Diamond, 2000). Yet, assessing psychosexual milestones among sexual minority youth presents several challenges for researchers. With notable exceptions (Diamond, 2008; Rosario, Schrimshaw, Hunter & Braun, 2006), much of the research on sexual minority youth is retrospective rather than longitudinal, requiring respondents to recall experiences which may have occurred many years prior. Psychosexual milestones are typically assessed using self-administered questionnaires (D'Augelli, 2003; D'Augelli, Hershberger & Pilkington, 1998; Dube, 2000; Giersten & Anderson, 2007; Maguen et al., 2002) or, less often, structured or semi-structured interviews (Diamond, 2008; Parks & Hughes, 2007; Savin-Williams & Diamond, 2000). Yet, recall bias remains a key threat to the reliability and validity of data collected using both of these methods (Freedman, Thornton, Camburn, Alwin, & Young-DeMarco, 1988; Savin-Williams & Diamond, 2000).¹ Further, traditional approaches to assessing psychosexual milestones typically record milestones as a whole number--the youth's age at the time of milestone occurrence. This means that two events that occurred months apart in the same birth year are recorded as occurring simultaneously, which may conceal the distinctions between important developmental events and distort sexual identity development trajectories (Maguen et al., 2002).

LIFE HISTORY CALENDAR METHOD

The Life History Calendar (LHC) method is designed to address some of these limitations. The LHC instrument itself is structured to take advantage of the ways that autobiographical memories are stored and retrieved utilizing calendar-based contextual cues to enhance the quality of respondents' retrospective reports of behaviors and events and to minimize recall bias (Belli, 1998). Thus, events from respondents' personal history that can typically be recalled with great precision in time (e.g., holidays, major family events, places of residence) are used to facilitate recall of other events that are more difficult to remember (Belli, 1998; Belli, Shay & Stafford 2001; Freedman et al., 1988). These contextual and visual cues help respondents recall the timing and sequence of even complex or intertwined events and allows respondents to correct errors as data is being recorded (Axinn, Pearce & Ghimire, 1999).

Although there are no known studies using an LHC to assess sexual identity development, the LHC method has been used in studies with adolescents on a range of topics including peer-group deviance, sexual experiences and sexual risk (Bay-Cheng, Robinson & Zucker, 2009; Kendler, Jacobson, Gardner, Gillespie, Aggen & Prescott, 2007; Martyn, Reifsnider & Murray, 2006). Previous studies have reported high reliability between retrospective LHC reports and real time reports (Caspi, Moffitt, Thornton, Freedman, Amell, Harrington, Smeijers & Silva, 1996; Freedman et al., 1988). Other studies have reported higher quality of retrospective reports from the LHC method compared to both paper and pencil and

¹See Fenton, Johnson & McManus, et al. (2001) or Widom, Raphael & DuMont (2004) for comprehensive discussion on the challenges associated with retrospective recall in social science research.

computer-assisted survey data collection methods (Belli, 2004; Belli, Shay & Stafford, 2001). The LHC method may be particularly useful for recall of events that occurred at younger ages (Yoshihama et al., 2005).²

The present study builds on previous research by exploring use of an LHC to assess sexual identity development processes and experiences. This paper compares youths' self-reports from the LHC to those from a self-administered survey to determine the level of agreement between the two methods including the consistency of milestone event occurrence and the consistency of the timing and sequence of those events.

METHODS

PARTICIPANTS

This study was part of a larger research project designed to examine HIV risk among sexual minority youth. A target sample of sexual minority males and a comparison sample of sexual minority females ages 14–24 ($\bar{X}$ = 18.71; SD = 2.18) was drawn from youth attending weekly activities and weekend drop-in programs at an LBGT community center in a large Midwestern city in the U.S., yielding a final convenience sample of 181 youth. All respondents completed a self-administered written survey. A purposive sub-sample of respondents (n = 16) was then selected to complete a Life History Calendar to explore sexual identity development experiences in more detail.

Youth in this sub-sample ranged in age from 15 to 20 years old with a mean age of 18.38 (SD = 1.59). The sample was diverse in terms of race/ethnicity: 50% (n = 8) African American, 25% (n = 4) Caucasian, 12.5% (n = 2) biracial, and 12.5% (n = 2) Hispanic. Most youth labeled themselves as gay (n = 9; 56.25%), followed by lesbian (n = 3; 18.75%), queer (n = 2; 12.5%), and unsure (n = 2; 12.5%). With regard to gender identity, most youth in this sample identified as men (n = 10; 62.50%), with a smaller number of women (n = 3; 18.75%) and transgender identified youth (n = 3; 18.75%). The composition of the sub-sample was similar to that of the larger study sample with regard to age and race/ethnicity (63% African American, 22% Caucasian), but the sub-sample included a greater proportion of women and transgender youth (13% and 9% of the larger sample, respectively) and included no youth who identified as bisexual (19% of the larger sample).

MEASURES

Self-Administered Survey—A self-administered survey was used to assess demographic characteristics, sexual health knowledge, attitudes and behaviors, and sexual identity development experiences. Psychosexual milestones were assessed by a six-item scale which asked respondents to report the age at which they had first experienced each event (i.e., attraction to someone of the same- and opposite sex, same- and opposite-sex sexual experience, self-labeling as non-heterosexual, and disclosure of non-heterosexual identity or experience). Opposite-sex attraction and experience were included as milestones because many sexual minority youth—even those who do not identify as bisexual—have had experiences with opposite-sex partners prior to same-sex activity (Savin-Williams, 2005).

Two additional variables were computed during data analysis. Respondents' developmental sequence was categorized as "sex-centered" if same-sex sexual contact preceded self-labeling as non-heterosexual; "identity-centered" if self-labeling as non-heterosexual

²See Glasner & van der Vaart (2009) for a comprehensive review of studies using Life History Calendar (or Event History Calendar) method.

preceded same-sex sexual activity; or “concurrent” if these two milestones were reported as occurring at the same time.

Life History Calendar—The LHC created for this study was printed in color on three legal-sized calendar sheets, each spanning a 5-year period. The upper section of the LHC included three rows of time reference cues (i.e., calendar year and month, year and semester in school, and respondent birthday and age) and three rows for “landmarks” or events thought to be easily remembered such as holidays and celebrations, jobs or places of residence. The lower section of the LHC included the six sexual identity development milestones of interest along the left column. For each row, an upper section was divided into sub-sections horizontally corresponding to individual month units along the top margin (calendar year and month), so the start and end points of events could be documented easily.

Completion of the LHC involved the following steps: (1) transferring milestone ages from the previously completed survey, (2) entering contextual cues and events on the top portion of the calendar, and (3) entering information about youths’ sexual identity development experiences on the bottom portion of the calendar. Prior to the interview, milestone ages reported on respondents’ self-administered surveys were entered on the LHC as anchors. While completing the top section, if youth indicated that there was nothing to report for a given row (e.g., no job history), they were asked if they could think of any other type of important events or experiences that were similar (e.g., recording important school events) which were then recorded.

The main section of the LHC was then completed using an interview format beginning with the earliest reported milestone from the survey. Respondents were asked, “On the survey you wrote that you first experienced [event] when you were [age] years old. Can you tell me more about that?” Further prompts were used as needed, such as “Is that age still accurate to the best of your memory?” “Can you remember the specific time of year, month, etc.?” and “Who were the people involved in that event?”

Transgender-identified youth were asked how they had conceptualized same-sex and opposite-sex attractions and contact when completing the self-administered survey (i.e., according to birth sex, current gender identity, or gender identity at the time of each milestone experience). All three youth indicated they had reported these milestones according to birth sex. To maintain consistency across instruments, the interviewer asked each respondent to use this same conceptualization when completing the LHC interview.

The LHC assessed the same six psychosexual milestones as those assessed by the survey. However, the nature of the LHC allowed for both quantitative and qualitative responses to be recorded. Quantitative data were recorded in the form of dates that corresponded to sexual identity developmental milestones and were recorded as precisely as the respondent recalled, as a specific date whenever possible. Contextual information for each milestone event was recorded in text below the graphical notation. Both the self-administered survey and LHC were piloted with five non-sample sexual minority youth from another organization prior to data collection to establish interview flow and respondent burden.

PROCEDURES

Voluntary informed consent was obtained from youth who were age 18 or older. Assent was obtained from youth under age 18 along with consent from the Youth Director who served as a youth advocate in lieu of parental consent. This procedure (Dube, 2000; Rotheram-Borus, Reid, Rosario, & Kasen, 1995a; Savin-Williams, 2001) was used to protect participants with parents who were unaware of their sexual identity and for whom standard parental consent procedures could result in rejection or other harm (Rotheram-Borus et al.,

1995). This study received approval from the Institutional Review Board of Washington University in St. Louis and received a federal Certificate of Confidentiality.

Respondents completed the self-administered survey in a private room at the community center in self-chosen friendship groups of two to five youth to increase comfort and participation. Respondents were also invited to complete the survey privately if they preferred, but none requested this option. Youth were spaced with several seats between each respondent to ensure the privacy of responses. At the start of each interview, the principal investigator read all survey instructions aloud, answered any questions, and then waited outside the door of the room to further ensure respondent privacy. Youth completed the survey in 25 minutes on average; the two-page portion assessing sexual identity development experiences took approximately 5 minutes to complete. Respondents received \$10 for completing the survey.

From this larger sample, a list of key informants was compiled based on the recommendations of staff members who frequently worked with the youth. Specifically, staff members were asked to recommend young people who would have personal knowledge of the sexual identity development process and, as a group, represent diverse backgrounds and perspectives. From this list, a sub-sample (n=16) was selected for participation in the LHC interview, which was conducted by the principal investigator during the same weekend as the survey.

LHC interviews were conducted in the private room which had been used for survey interviews. Respondent and interviewer sat next to one another at a long table with the pages of the LHC laid out in front of them (1–3 LHC pages were used for each respondent, depending on how early the first milestone event had occurred). This arrangement allowed both the interviewer and respondent to view the LHC as it was completed so they could confirm the accuracy of all entries, detect reporting gaps, and add or correct information as appropriate (Axinn, Pearce & Ghimire, 1999). The interview continued until each of the six psychosexual milestone events had been discussed. Depending on each respondent's unique trajectory, milestone events were typically revisited one or more times throughout the course of the interview as the calendar developed (e.g., when discussion of a milestone event brought up additional details about a previously discussed milestone).

The LHC interviews lasted 42 minutes on average, and respondents received \$20 for their participation. Interviews were audio recorded and checked for accuracy by the principal investigator or graduate research assistant.

DATA ANALYSIS

Intercooled Stata version 9 was used for data cleaning, coding, and analysis. For the purposes of this project, only data related to the timing and sequence of the six developmental milestones were analyzed.

Graphical data for developmental events recorded on the LHC were converted to a numerical equivalent. For example, an event that was marked on the LHC as occurring seven weeks and three days after a respondent's 16th birthday would be recorded as 16.14 (i.e., 52 days divided by 365 days in a year). If a respondent reported that an event occurred, for example, "somewhere during this two-month time period," but could not recall a more exact date, the numeric equivalent of the midpoint of the identified time period was recorded for that milestone. Two developmental trajectories were created for each youth: one based on survey data and the other from LHC data. Survey and LHC trajectories were then analyzed to determine the level of agreement in youths' self-reports for the occurrence, timing and sequence of youths' milestone experiences according to each instrument.

RESULTS

Study findings related to the level of agreement between the LHC and survey are reported below. The mean, standard deviation, and range as well as the minimum, maximum, and mean discrepancy scores for each milestone event are displayed in Table 1. Figures 1–6 illustrate the levels of agreement between the survey and LHC reports for each psychosexual milestone.

MILESTONE OCCURRENCE

At least once for each of the six milestones, a respondent reported experiencing the milestone on one instrument but indicated that it hadn't occurred on the other instrument (a total of nine times across the sample). Specifically, among youth who reported experiencing each particular milestone, one respondent reported same-sex attraction (6.25%) and another reported opposite-sex attraction (6.25%) on the survey, but neither reported these events on the LHC. Two youth (12.5%) reported same-sex contact on the survey only, while three youth (18.75%) gave inconsistent reports of opposite-sex contact (i.e., two reported the milestone on the survey only; one reported it on the LHC only). Self-labeling was reported on the survey but not the LHC by one youth (6.25%) as was disclosure (6.25%).

MILESTONE TIMING

Overall, discrepancies in the timing of psychosexual milestones between the LHC and survey ranged from as little as 0.2 years (i.e., approximately 2.5 months) to as much as 15 years (see Table 1). On average, survey reports compared to LHC reports on milestone timing differed by slightly less than one year for four milestones with average discrepancies of 1.5 years for same-sex attraction and 1.7 years for self-labeling. As illustrated in Figures 1–6, consistent reports (i.e., discrepancies of less than six months) between the LHC and survey were reported by less than half the sample for all but one milestone. Among youth who reported experiencing each milestone event, consistent reports across the instruments ranged from a low of 11% for opposite-sex contact to 35% for same-sex contact and 40% for disclosure. Consistency of reports was slightly higher for same-sex attraction (44%), self-labeling (44%) and opposite-sex attraction (50%).

The greatest discrepancy between survey and LHC reports was found on the timing of youths' first self-labeling as non-heterosexual which ranged from approximately five months to 15 years. Notable discrepancies of as much as 6.2 and 3.7 years were found among youths' reports of first same-sex attraction and disclosure, respectively. Discrepancies ranged from approximately one month to more than two years for first same-sex and opposite-sex attractions, while differences between survey and LHC reports of first opposite-sex contact ranged from three months to 1.73 years.

MILESTONE SEQUENCE

Survey and LHC data were examined to determine whether discrepancies existed in the developmental sequences of youth. In addition to the sex-centered and identity-centered sequences discussed in previous research, a concurrent sequence emerged for some youth who reported experiencing both the same-sex contact and self-labeling milestones at the same time. Survey reports indicated that most youth experienced an identity-centered developmental sequence ($n=11$; 68.7%), with a smaller number of youth reporting a sex-centered ($n=3$; 18.75%) or concurrent sequence ($n=2$; 12.5%). Among youth who reported these milestones on the LHC ($n=15$), a similar distribution was found: 73.3% ($n=11$) identity-centered, 20.0% ($n=3$) sex-centered, and 6.7% ($n=1$) concurrent.

Data from the survey and LHC presented discrepant pictures of the time period between youths' experiences of these milestones. Survey reports indicated that, on average, identity-centered youth self-labeled 3.2 years prior to their first same-sex encounter. Youths' LHC reports suggested that these events occurred an average of 2.7 years apart. Among youth who followed a sex-centered developmental sequence, survey results indicated that first same-sex sexual activity preceded self-labeling by an average of 4.0 years. According to LHC data, youth self-labeled an average of 5.3 years later, however.

Changes in reported ages of milestone experience between the survey and LHC constituted a different developmental sequence for one quarter (25%) of the sample. Specifically, one male youth's sequence changed from sex-centered to concurrent, another's from identity-centered to sex-centered, and a third from concurrent to not applicable (i.e., no self-label or same-sex sexual experience was reported on the LHC). For one transgender youth, survey data indicated a concurrent sequence while LHC data indicated a sequence which was identity-centered.

DISCUSSION

Results indicated modest agreement between the Life History Calendar and the survey overall, with individual youths' reports of milestone timing varying by as little as .02 years to as much as 15.0 years between the two methods. Two overarching patterns emerged in these divergent data. First, some youth reported having experienced a particular milestone event on one instrument and not the other, which presents the clearest illustration of incongruence between the two assessments. In eight out of the nine cases when this occurred, respondents reported the milestone experience on the survey and not the LHC. Typically respondents indicated that this was due to their correction of an error made while completing the survey. For example, one respondent who reported an opposite-sex sexual experience on the survey clarified during the LHC interview that he had kissed a girl once but never had a sexual experience beyond that. Another youth explained that although he had endorsed the self-labeling milestone on the survey, he was still at the point of questioning his sexual identity and had not yet adopted a non-heterosexual descriptor. For other youth, this discrepancy between measures highlighted the subjective nature of what should "count"--or what respondents themselves wanted to be counted--as a milestone event. Three of these youth reported a sexual experience milestone (two same-sex and one opposite-sex) on the survey but then explained during the LHC interview that they did not think the experience should "count" as a milestone because it was non-consensual. For one respondent, the opposite was true: he did not report a non-consensual opposite-sex sexual experience on the survey but indicated that it should be included on the LHC because of its influence on his subsequent sexual identity development process.

Second, when there was a discrepancy between ages of events reported on both the survey and LHC, youth tended to report milestone events as occurring at younger ages on the LHC compared to the survey. Of youth reporting a same-sex attraction on both instruments, 93% (n=14) reported a younger age for this experience on the survey than they did on the LHC. This was also the case for 92% (n=11) of youth reporting same-sex sexual contact on both instruments, 71% (n=10) of youth reporting a disclosure experience, and 67% (n=10) of youth reporting a self-label milestone.

In cases where only a minimal discrepancy existed between LHC and survey reports, this discrepancy appeared to be due to the survey's response format, which elicited ages for milestone events in whole numbers. For example, "Michelle" (participant 16) reported very similar milestone ages on both instruments, with survey ages of 14, 15, 18 and 18, and LHC ages of 14.33, 15.04, 18.92, and 18.25. These results suggest that she was very consistent in

her recall of milestone events between the two methods but some degree of precision was lost in her report of each milestone age as a whole number on the survey. During the LHC interview, she was able to indicate as precisely as her memory allowed even down to the exact day when each event occurred. Thus, her disclosure of her lesbian identity to her mother, which was recorded on the survey as occurring simultaneously with her first sexual experience with a woman, was more precisely recorded on the LHC as preceding the sexual encounter by eight months.

Despite discrepancies in youths' reports of milestone events across instruments, the distributions of youth into each of the three developmental sequences were very similar between the survey and LHC. More than two-thirds of the sample developed through an identity-centered sequence (68.7% and 73.3%), followed by a sex-centered (18.8% and 20.0%) and concurrent sequence (12.5% and 6.7%) as indicated on the survey and LHC, respectively. These findings are somewhat consistent with findings from Dube's (2000) study in which a majority (56%) of young sexual minority males ages 15–19 reported an identity-centered developmental sequence. As Dube noted, research suggests that younger cohorts of sexual minority males are increasingly adopting non-heterosexual identity labels prior to engaging in same-sex sexual activity. This may be due to increasing visibility and acceptance of sexual minority populations in mainstream society. Future research is needed, however, to investigate ways in which these developmental trajectories may vary by sexual orientation and gender identity.

Youth in this study who developed through an identity-centered sequence reported labeling themselves as non-heterosexual approximately three years (2.7–3.2) before their first same-sex sexual encounter, while a longer period of time passed between these milestone events for sex-centered youth (4–5.3 years). These findings suggest that identity-centered youth in the current study experienced these milestones more quickly--and sex-centered youth experienced them more slowly--than the young cohort in Dube's (2000) study who reported an average delay of 3.7 years and 3.5 years for identity-centered and sex-centered youth, respectively. The mixed gender sample in the current study may account for these differences, however. Notably, the order of these two key developmental events (i.e., same-sex sexual contact and self-labeling) was inconsistent for one-fourth of youth in the current study sample. Given that youths' developmental sequence may impact sexual risk taking (Dube, 2000), further research comparing LHC and survey methods with larger samples is also warranted.

Without a means of objective verification for the timing of these developmental milestones among this sample, it is not possible to determine if either of the developmental trajectories based on survey data or LHC data reflect youths' "true" sexual identity development experience. However, these findings as well as previous research on the LHC method suggest that the LHC may enhance retrospective recall to facilitate a more precise recording of youths' trajectories compared to standard survey methods. Study results suggest that these benefits may be more pronounced for youth who reported beginning the sexual identity development process at a younger age.

An individual-level examination of the divergent trajectories reported above suggests that youth with the greatest discrepancies between their survey and LHC reports may have been able to recall milestone events—particularly those occurring earlier in their lives—more accurately using the LHC than the survey. For example, “Andre” (respondent 9) reported that he first self-labeled as non-heterosexual and experienced his first same-sex attraction at age one on the survey but reported these events on the LHC as occurring at ages 7.17 and 16, respectively. When asked about this discrepancy during the LHC interview, he explained that, while completing the survey, he had struggled to remember when these events

happened and finally had written an age of one because he remembered being very young. During the process of completing the LHC, however, he was able to recall his first same-sex attraction more accurately with the help of many other contextual cues and to distinguish between what he described as “knowing [he] was different somehow” at a very young age and actually self-labeling as something other than heterosexual, which he reported on the LHC as happening on the night of his 16th birthday.

Survey data also indicated 16 instances in which respondents had reported experiencing two or more milestone events at the same time. LHC data, however, indicated only three such instances. This is consistent with the critique by Maguen and colleagues (2002) that the conventional method (i.e. survey) of assessing sexual identity milestones as an age in years may conceal the distinctions between events and distort youths’ developmental trajectory. The experiences of two young people who both adopted a non-heterosexual self-label just after turning 15 could be quite different if one youth disclosed one week later and the other waited another eleven months to disclose her sexual identity to someone else. Presumably, these two youth would have very different experiences during those eleven months (e.g., social support, relationships with other non-heterosexual individuals to normalize and affirm their sexual identity, access to resources, connection to a broader LGBTQ community), yet these young people’s trajectories would likely look the same on traditional assessments in that both milestones for both youth recorded as occurring at age 15. If we intend to provide developmentally appropriate and culturally relevant services to sexual minority youth, we must begin with an understanding of how their identities have emerged and evolved.

Overall, youths’ reports of milestone events in this study diverged from those reported in previous studies. Research has suggested the following average age ranges for the timing of psychosexual milestones: 7.7–11.1 for first same-sex attraction, 13.1–16 for first same-sex sexual contact, 14.6–17.6 for first self-label, and 16.0–17.9 for first disclosure (D’Augelli, 1998; D’Augelli & Hershberger, 1993; Herdt & Boxer, 1993; Maguen et al., 2002; Rosario et al., 1996; Savin-Williams & Diamond, 2000). Survey data suggests that youth in the current study are similar to previous samples with regard to age of first same-sex attraction (10.6) and same-sex sexual contact (13.4), but these youth reported experiencing first self-labeling and disclosure at younger ages (12.6 and 15.3, respectively). Reports from the LHC suggests developmental trajectories which are even more divergent from previous studies. Compared to previous samples, youth in the present study were, on average, older at first same-sex attraction (11.3) but younger at first same-sex contact (12.9), first self-label (13.1), and first disclosure (15.2). While these mean ages suggest an ordered linear progression of developmental milestones, it is important to note that only two of the 16 respondents actually reported experiencing the milestones in this order.

Several study limitations should be noted regarding these findings. First, the convenience sample of youth recruited from an LBGT community center limits generalizability of findings to the larger population of sexual minority youth, particularly to those who do not regularly attend organizations or groups that cater to sexual minorities. Additionally, the small sub-sample and recruitment of key informants for this exploratory portion of the study further limits the study’s external validity, particularly given that staff recommendations may have yielded a sub-sample of youth who attended the center more frequently, were more open about their sexual identities, were more popular, or were more well liked by staff. Second, despite evidence of the LHC method’s ability to enhance retrospective recall, cross-sectional LHC data is limited compared to longitudinal approaches. Third, social desirability was not assessed, so it is unknown to what extent this bias may have impacted youths’ responses. Finally, there is potential for interviewer bias with this interviewer-administered LHC instrument.

Despite these limitations, this study represents a first step in a much needed evaluation of the instruments used to assess the sexual identity development trajectories of sexual minority youth. Consistent with previous research on the utility of the LHC method with adolescents, study findings suggest that the LHC method may be a promising technique for assessing sexual identity development trajectories among sexual minority youth. With its embedded cues to facilitate autobiographical recall and a structure that fosters self-correction by respondents, the LHC method could promote the type of “coordinated assessment of the timing, context, spacing, and sequencing of sexual identity development milestones” called for by Savin-Williams and Diamond more than a decade ago (2000, p. 611).

Given its adaptability and flexible structure, the LHC could also be adapted for use with sexual minority youth in practice settings such as counseling agencies, health clinics, child welfare agencies, homeless shelters, and schools. Because administration of the LHC is rather intuitive and would not require extensive training, the LHC may appeal to practitioners as a tool to assess stressful life events, sexual risk taking or substance use, and bullying and victimization, as well as the positive events and experiences that promote health and well being.

Future studies with larger sample sizes are needed to corroborate these findings and to establish the reliability and validity of the LHC with sexual minority youth. Research investigating the extent to which use of a typical survey compared to alternate methods such as a Life History Calendar will yield significantly different findings about the sexual identity development trajectories of youth is also needed. Studies with samples large enough to explore the nature of these potential differences for youth of different gender identities and sexual orientations would be particularly useful. Finally, the LHC instrument used in the current study required significantly more time to administer than did the survey (i.e., typically 30–50 minutes compared to 5 minutes for the two survey pages that related to sexual identity development milestones), which could be prohibitive in many data collection settings. Self-administered versions of the LHC should be explored for use in such situations.

Research has suggested that ages of attainment and sequences of sexual identity development milestones are related to myriad outcomes for sexual-minority youth, including suicide, victimization, internalized homophobia, sexual risk taking, and self-esteem. Exploring innovative ways to assess youths’ sexual identity development trajectories should be part of a larger research agenda to better understand the unique lives of sexual minority youth and improve our ability to estimate and predict these important outcomes.

Acknowledgments

This analysis was part of a larger study, HIV Risk and Sexual Identity Development, supported by the National Institutes of Health (F31MH077529) and the Comorbidity and Addictions Center at Washington University in St. Louis.

The author gratefully acknowledges Adam Leonard for his assistance with the presentation of study findings and his helpful comments on a preliminary draft of this article.

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Figure 1. Level of agreement between survey and LHC data for first Same-Sex Attraction (SSA)
 Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

Figure 2. Level of agreement between survey and LHC data for first Opposite-Sex Attraction (OSA)

Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

Figure 3. Level of agreement between survey and LHC data for first Same-Sex Contact (SSC)
Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

Figure 4. Level of agreement between survey and LHC data for first Opposite-Sex Contact (OSC)

Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

Figure 5. Level of agreement between survey and LHC data for first Self-Label (SL)
Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

Figure 6. Level of agreement between survey and LHC data for first Disclosure (D)
Circles indicate highest agreement (<.5 year discrepancy) and arrows indicate lowest agreement between survey and LHC reports; (S) indicates survey data. Brackets indicate that the milestone event was reported on either the survey or LHC but not both (color figure available online).

TABLE 1
Mean, Standard Deviation, Range, and Discrepancies Between Youth's Survey and LHC Milestone Age Reports

Milestone	Survey			LHC			Difference ^b		
	<i>n</i>	Mean (SD)	Range	<i>n</i> ^a	Mean (SD)	Range	Min	Max	Mean (SD)
Same-sex attraction	16	10.63 (3.74)	1–15	15	11.30 (3.35)	5.50–15.85	0.12	6.20	1.50 (1.99)
Opposite-sex attraction	10	11.4 (3.53)	3–15	9	11.25 (3.81)	3.19–15.10	0.10	2.33	0.88 (.87)
Self-label	16	12.56 (4.75)	1–19	15	13.10 (3.14)	6.02–16.17	0.04	15.0	1.72 (3.78)
Same-sex sexual contact	14	13.36 (4.05)	5–19	12	13.05 (4.16)	5.75–18.92	0.10	2.67	0.70 (.73)
Opposite-sex sexual contact	8	14.88 (4.16)	5–18	7	15.49 (4.23)	6.50–18.92	0.23	1.73	0.98 (.55)
Disclosure	15	15.27 (1.91)	10–18	14	15.21 (2.11)	10.75–18.25	0.02	3.65	0.79 (.90)

^aIndicates number of respondents endorsing each milestone event (indicates discrepancy between LHC and survey).

^bDifference in years.