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ORIGINAL PAPER

The Relationship Between Low-Income College Students' Time Use and Well-Being: A Mixed Methods Exploration

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Abstract
Recent reports show that low-income students make up a significant share of those participating in higher education, and their well-being constitutes a key factor that influences their college success. This mixed-methods study examined first-year, low-income students' time use and its relationship to well-being framed by an equity-oriented lens that recognizes the time constraints low-income students navigate. Our mixed methods findings identified the link between time use and well-being and—critically—empirical explanations for these links. First, leveraging a unique experience sampling survey design and multilevel analyses, we found that attending class, studying or doing homework, and working for pay were consistently and adversely related to low-income students' well-being. Low-income students who were also first-generation in college fared worse than continuing-generation students when engaging in these experiences. On the other hand, socializing was positively related to low-income students' well-being. Second, an exploration of longitudinal data from hundreds of student interviews illuminated two primary factors that shaped the relationship between low-income students' time use and well-being: (a) structuring time and developing a routine, and (b) the power of reflection and meaning-making. These findings provide important novel insights about low-income students' college experiences and the relationship between their time use and well-being, and offer crucial guidance for educators on how to support low-income students' well-being as they navigate college.

Keywords Low-income students · Time use · Well-being · Mixed-methods

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Recent reports show that low-income students make up a significant share of those participating in higher education (Cahalan et al., 2022; Fry & Cilluffo, 2019). However, compared to their higher-income counterparts, low-income students[1] experience a number of unique challenges that affect their college success upon matriculation (Hurst, 2010; Kezar, 2011; NCES, 2018). College access for low-income students is praiseworthy, but educators also have a responsibility to facilitate a successful college transition to fully realize the promise of higher education to improve low-income students' lives. Understandably, policymakers commonly focus on financial factors that bear on low-income students' college success, but the literature is replete with evidence that many other factors impact whether low-income students complete college and that postsecondary institutions can influence these factors through appropriate guidance, support, and policy (Kezar, 2011; Quaye et al., 2019). For instance, researchers have documented that low-income students are more likely to experience cultural and social alienation and the insidious threats of classism (Hurst, 2010; Kezar, 2011; Soria et al., 2013), they typically feel less sense of belonging in college than their higher-income peers (Bettencourt, 2021; Soria et al., 2013; Strayhorn, 2018), and they often have greater family responsibilities and resource constraints that affect their college experience and retention (Corrigan, 2003; Kezar, 2011). Low-income students are also more likely to hold racially minoritized and first-generation identities (Engle & Tinto, 2008; Taylor & Turk, 2019); these students encounter additional factors that affect their college success, such as racial discrimination, racial battle fatigue, microaggressions, systemic injustice, and stress associated with navigating postsecondary systems that were not designed to enhance their success (Buchanan et al., 2009; Brondolo et al., 2012; Ceja et al., 2000; Franklin, 2016; Kezar et al., 2023; Kitchen et al., 2021).

Given the many documented challenges low-income college students face and the potential ways these factors could shape their college experiences and well-being, the well-being of low-income students is surprisingly understudied. This is the case despite the established connection between students' well-being and college success and retention (Arria et al., 2013; Duffy et al., 2020; Eisenberg et al., 2009). The absence of research centering low-income students' well-being is especially notable given the ways that sociocultural, economic, and class-related factors influence well-being in society and in light of previous calls for further study of the nexus between social class and students' well-being (American Psychological Association, 2007; Aydin & Vera, 2020; World Health Organization, 2014). Indeed, low-income students face multiple, compounding factors that could potentially influence their well-being in college, including competing time commitments (e.g., employment, classes, family obligations), financial stressors, classism, and culturally alienating college environments (Allan et al., 2016; Ardoin, 2017; Bettencourt, 2021; Carnevale & Smith, 2018; Hurst, 2010; Kezar, 2011; Soria & Bultmann, 2014). Low-income students who hold other minoritized identities face additional compounding factors that can affect their well-being, such as hostile racial climates (Franklin, 2016; Rankin & Reason, 2005).

[1] This study is part of a larger funded project examining low-income student success defining low-income as no more than $10,000 Expected Family Contribution as reported on the Free Application for Federal Student Aid (FAFSA). While other studies have defined low-income based on other measures, such as parent education or first-generation status, FAFSA is a widely used federal measure to determine students' family income and financial need and thus one the project leveraged to define low-income. The <$10,000 EFC definition has been adopted by scholars in recent large-scale studies of low-income college students (e.g., Angrist et al., 2022; Swanson et al., 2021).

While college students' well-being is known to influence a successful college transition and has garnered increased attention from educators and policymakers (Abrams, 2022), little research has explicitly documented how *low-income* students' experiences in various activities during college (e.g., class, homework, working) may contribute to their well-being. To address this gap in scholarship, our mixed-methods study examined how common experiences during college may shape first-year, low-income students' well-being by addressing two research questions: (1) What is the link between low-income students' well-being and commonly reported experiences during their first year in college? (2) What factors shape the relationship between low-income students' time use in college and their well-being? In this study, we examine time use based on real-time information about low-income student experiences during college, and how students describe their time use in relation to their well-being.

Literature Review

This literature review summarizes perspectives on well-being and connects well-being and student success. Then, we synthesize scholarship detailing relationships between well-being and common time use experiences in college, like academic activities and working for pay. Finally, we describe scholarship that suggests the unique, complex challenges low-income students face and the need to explicitly examine connections between their commonly reported college experiences and well-being, including underlying and systemic factors that shape how low-income students navigate their time use and well-being.

Well-Being and Student Success

Well-being is multifaceted and encompasses an individual's emotional, social, intellectual, physical, financial, environmental, spiritual, and occupational wellness (SAMHSA, 2016). Different traditions conceptualize well-being in distinct ways. Subjective well-being reflects an individual's affective and cognitive evaluation of their life and generally refers to positive emotions (e.g., happiness, excitement) and the lack of negative emotions or ill-being (e.g., stress, sadness) (Diener, 2009; Kim-Prieto et al., 2005; Ryan & Deci, 2001; Ryff, 1989). Psychological well-being pertains more directly to pursuing or fulfilling one's potential, including perceptions of personal growth, purpose, belonging, and competence; existing scholarship in higher education has often focused on such dimensions within this tradition of well-being. Researchers argue that well-being is crucial for understanding college student experiences and is essential for college success (e.g., Bowman et al., 2019; Keyes, 2016). While effects of the pandemic exacerbated challenges across multiple facets of well-being (e.g., psychological, physical, financial), concerns about college students' well-being predate the COVID-19 pandemic. Educators' concerns are well-founded given that well-being is connected to students' academic achievement, retention, and graduation (Arria et al., 2013; Duffy et al., 2020; Eisenberg et al., 2009).

College Students' Time Use and Well-Being

Time engaged in various college experiences constitutes a well-documented factor in student success (Astin, 1984; Mayhew et al., 2016; Quaye et al., 2019; Wolf Wendel et al., 2009). In turn, the ways that students spend time in college are associated with their well-being (Baik et al., 2019; Bowman, 2010; Kilgo et al., 2016). Below, we summarize research exploring the link between well-being and several common time use experiences.

Academic Experiences

Research has yielded mixed findings for the relationship between academic activities and well-being. Recent survey evidence suggests that academic activities (e.g., homework, exams) are some of the top stressors college students face, and students who experience chronic stress are notably more likely to have a mental health condition (Flaherty, 2023a). Ayala and colleagues (2017) also found that time in class and time spent studying led to lower student well-being. However, the link between studying and well-being was more favorable when students studied with other people. Moreover, Novo and colleagues (2020) found that class participation (measured via attendance and engagement with the course and course material) was significantly and positively related to well-being. Eloff and colleagues (2021) found that instructor support was critical for student well-being and can be one way that educators can help create supportive academic environments. There is also emerging evidence that participating in academic support programming can effectively support college students' well-being (Swanbrow Becker et al., 2017). Given that college students can expect to dedicate substantial time to academic activities, it is important to better understand the connection between well-being and academics.

Furthermore, the connection between academic activities and well-being is related to campus culture. Universities with intense striving cultures can undermine students' well-being, as students may feel overwhelmed with balancing time spent on academic work and working for pay, or may neglect other healthy behaviors because of their time use obligations (Oades et al., 2011). These high expectations may come from peer culture as well as faculty and staff. Higher education culture typically mirrors white, middle-class norms and values (Bettencourt 2019; Nguyen & Nguyen, 2018; Stephens et al., 2019; Stuber, 2011), which can lead low-income students to feel alienated and disconnected on college campuses. These feelings of alienation may be intensified in campus environments characterized by striving culture–not because low-income students fear hard work, but because of the ways striving may reflect values associated with middle and upper class culture, such as individualism and competition (Bettencourt, 2019).

Working and Employment

Working for pay constitutes another common way that many students spend their time during college (Kezar, 2011; Walpole, 2003), though working for pay is often a necessity, not a choice. Research examining the link between working during college and well-being is nuanced and mixed. Many students work to help cover college expenses (Goldrick-Rab, 2016), and these additional hours spent working can take away from spending time in other ways. For instance, Flaherty (2023b) found that 49% of students who worked 30 h per

week dedicated no time to extracurricular activities, which may be to the detriment of students' well-being (Doerksen et al., 2014; Kilgo et al., 2016). Bowman (2010) found that working off campus under 10 h a week predicted lower psychological well-being relative to not working at all, while working over 20 h per week (on or off campus) was surprisingly associated with increases in psychological well-being–suggesting that the association between paid employment and students' well-being may be non-linear. On the other hand, Ridner et al. (2016) found no differences in well-being outcomes between students who were employed and those who were not. Lastly, there is emerging evidence that student employment experiences may be beneficial for racially minoritized students and aid in the development of emotional intelligence, with implications for their well-being (Burnett, 2023). Given the mixed findings around time spent working and its connection to student well-being, further research is needed to clarify this relationship.

Extracurricular, Social, and Other Activities

Scholarship has illuminated several positive relationships between student well-being and various forms of time use such as socializing and extracurricular involvement. For instance, prior research has shown that students who spend more time engaging in social activities reported higher life satisfaction (Doerksen et al., 2014), and involvement in activities such as intramural sports and student organizations is also positively related to students' well-being (Kilgo et al., 2016). Others have found that time spent on activities during college like meditation (Crowley & Munk, 2017), physical activities (Bray & Born, 2004), and sleeping (Gaultney, 2010; Ridner et al., 2016) can also positively contribute to well-being. While research on the relationships between well-being, academic experiences, and working is nuanced and mixed, scholarship by and large suggests that participation in social, extracurricular, and wellness related activities (e.g., physical activities, sleeping) positively contributes to students' well-being. Low-income students may be less likely to engage in many of these beneficial social and extracurricular activities due to constraints on their time (Flaherty, 2023b; Martin, 2012; Walpole, 2003).

Low-Income Students' Time Use and Well-Being

Scholarship has elucidated the connection between one's social class and well-being (APA, 2007; Evans & Rubin, 2022; Sabaner & Arnold, 2021; WHO, 2014). However, research examining the link between common time use experiences and well-being among low-income college students is scant. Given the multiple barriers low-income students face in college, which often result in lower retention and graduation rates (Britt et al., 2017; Engle & Tinto, 2008; Deil-Amen & DeLuca, 2010; Goldrick-Rab, 2016), it is even more important to explicitly center well-being in explorations of low-income college students' experiences. This is particularly true given research shows that the ways students spend their time, particularly in relation to work, caregiving, and other obligations (activities low-income students are commonly compelled to do), may significantly shape students' well-being and academic performance (Burston, 2017).

Scholars recognize that low-income students have historically spent their time in college differently than their more affluent counterparts, with potential implications for their well-being and college success. Generally, low-income students spend less time on extracurricu-

lars (e.g., clubs, organizations), more time working for pay, and less time studying (Walpole, 2003). More recent evidence similarly suggests that students from lower-class backgrounds are less likely than their privileged-class counterparts to be involved in campus social activities and more likely to be working part-time, which researchers attribute to class-based financial and time constraints (Flaherty, 2023b; Martin, 2012). Still, these examinations have not considered the relationship between the ways low-income students commonly spend their time and their well-being, nor the underlying factors that shape how low-income students navigate their time and its connection to their well-being. Our inquiry addresses this gap.

Conceptual Framework

We leveraged time navigation (Bettencourt et al., in review; Hypolite et al., 2021) for our conceptual framework. Prior research on time use often implicitly or explicitly takes an individualistic, decontextualized stance that can be harmful to marginalized students by framing how they use and navigate their time from a deficit point of view (i.e., students lack the capability or commitment to successfully navigate their time use; see Bennett & Burke, 2018). Scholars have argued that time is finite and personal, institutional, and environmental factors often constrain the quantity and quality of time that students can dedicate to their commitments, which has substantial consequences for students' well-being and academic success (Vickery, 1977; Wladis et al., 2018). Given these systemic constraints, students actually maneuver and navigate time commitments, rather than manage them (Bettencourt et al., in review; Hypolite et al., 2021). In recognition of these structural constraints on students' time use, we draw on the equity-oriented lens of *time navigation.* Time navigation calls attention to the societal structures that shape low-income and working-class college student obligations (e.g., employment, family caretaking, housework) and limit their agency over how time is allocated and spent in college due to the need to address multiple tasks competing for their time that differ from their higher income counterparts (Bettencourt et al., in review; Flaherty, 2023b; Hypolite et al., 2021; Martin, 2012; Walpole, 2003).

Time navigation is rooted in a critique of the concept of "time management" as capitalistic, individualistic, focused on efficiency and productivity, and a one-size-fits-all set of skills that may not reflect the unique lived realities and obligations of marginalized students like those from low-income and working-class backgrounds (Bettencourt et al., in review; Hypolite et al., 2021; Marx, 1906; Whitley, 2009). Time navigation acknowledges that low-income, working-class students do not have unlimited time to devote to college activities, often have limited agency over the amount of time they can spend on certain activities due to constraints on their time that are out of their control (e.g., having to work to survive; family care responsibilities), and navigate competing priorities and commitments including those outside of college (e.g., getting called into work, unreliable transportation). Rather than adopt the deficit-oriented idea of poor time management skills that blames low-income, working class students for these challenges, time navigation elevates the many ways low-income students navigate their commitments both in and outside of college, promotes understanding of students' lived experiences and goals (rather than making normative assumptions about how they should spend their time), and acknowledges the role of systems and institutions in shaping how they navigate time (Bettencourt et al., in review; Hypolite et al., 2021).

Methods

We employed a sequential explanatory mixed methods approach to identify the association between low-income students' well-being and their experiences during college (quantitative) and to understand the factors that shape the relationship between their time use experiences and well-being in college (qualitative; Ivankova et al., 2006; Johnson & Onwuegbuzie, 2004). A mixed methods approach was well-suited to answering our two research questions because it enables us to bridge quantitative and qualitative findings, avoids inherent constraints of mono-methodological approaches, and offers a more complete, complex, and nuanced understanding of the phenomenon of interest (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Teddlie, 2003).

In our sequential explanatory mixed methods design, multi-institutional quantitative time use data were first analyzed to explore the relationship between commonly reported experiences during college and well-being among low-income students. This study presents quantitative results only for the most common uses of time to promote triangulation with the qualitative data and to meaningfully narrow the scope of our exploration. Second, we leveraged data from hundreds of low-income student interviews at these same institutions to contextualize the quantitative findings and identify factors that explained the relationships between how students spent their time in college and their well-being. As discussed below, the strands of quantitative and qualitative research informed each other at the study design, data collection, and interpretation phases—contributing to a robust mixed methods design (Cole et al., 2019; Creswell, 2014; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Teddlie, 2003). In this section, we first describe the quantitative and qualitative data sources we drew on for our mixed methods study, and then describe the quantitative and qualitative data analyses.

Data Sources

Quantitative Data

Our study draws on a unique time use survey design. Data were collected from first-time, first-year, low-income students with a FAFSA Expected Family Contribution (EFC) of no more than $10,000 who were attending one of three public universities within a Midwestern state system. These institutions included a research university in a college town, a commuter university in a large city, and a regional comprehensive university in a rural area. Experience sampling methods were used for collecting quantitative data; this approach has the benefit of providing real-time data and therefore yielding more accurate survey responses about time use and relevant outcomes (for an overview of these techniques, see Bolger & Laurenceau, 2013; Silvia & Cotter, 2021). Students were invited to participate in very short (one minute or less) time use surveys in Fall 2022 that were administered through an app that they downloaded onto their smartphones. Students received four surveys via app notifications at random times daily over seven consecutive days in their first semester for a total of 28 surveys; the potential timing of these invitations was limited to hours of the day in which students were likely to be awake. Students who downloaded the app received all 28 survey notifications regardless of whether they had responded to previous survey(s). Emails that invited students to participate were also randomly distributed throughout differ-

ent weeks of the semester to obtain a broader range of experiences at different points in time. Students received up to a $40 gift card if they completed all time use surveys; the amount of the gift card was based on the number of surveys completed.

Quantitative analytic data consisted of 4,296 responses to individual time use surveys that were completed by 200 participants. This group of students completed 77% of the surveys that they were invited to take. All survey observations were used in the analyses regardless of the total number of surveys that each participant completed. The demographic characteristics of participants were 50% White, 27% Latinx, 8% Black, 7% Asian, and 9% multiracial or another race, 69% were female, and 57% were first-generation college students. Although the student-level response rate was modest (i.e., the percentage of students who downloaded the app and participated in the surveys was 15% of those who were invited), our analytic sample was representative of the population of students at these universities in terms of race, first-generation status, and high school GPA, whereas female students were somewhat overrepresented within the present sample.

Table 1 provides an overview and some additional information about our survey measures. Within each survey, participants were asked to report what they were doing by selecting from a list of 19 options (e.g., "attending class," "working for pay") at the moment they received the survey app notification. These students were able to select multiple options during a single time point if applicable (e.g., commuting/traveling and social media/text/video chat). Each of these response options was coded separately as its own binary variable (1 = engaging in this activity, 0 = not engaging in this activity). This study focused on examining the eight most common uses of time to promote triangulation with the qualitative data and to meaningfully focus the scope of our exploration—the other 11 time use measures noted in Table 1 functionally served as control variables within our analyses.

To measure well-being, participants were also asked to rate the extent to which they were experiencing seven different emotions (e.g., "happy," "stressed") at the moment they received the notification. These well-being responses were used to create variables that indicated positive well-being (3 items; $\alpha = 0.84$) and negative well-being (4 items; $\alpha = 0.83$). Both well-being variables were subsequently standardized with a mean of zero and a standard deviation of one; this approach allows the unstandardized coefficients for each time use variable within the multilevel model to be interpreted as a Cohen's *d* or standardized mean difference (Mayhew et al., 2016).

A variety of control variables were included within our statistical models (see Table 1). Several within-student categorical measures were indicated via dummy coding: week within the semester (e.g., Week 5), day of the week (e.g., Monday), and time of day (before 12pm, 12 − 4:59pm, 5pm or later). The amount of time between the app notification and the start of the survey response was treated as continuous. These control variables were included to account for any confounding of survey timing and response attributes with the link between time use and well-being (e.g., self-reports may be more accurate if they occur shortly after the invitation is sent). Students often responded to invitations very quickly; the median response time was just four minutes after receiving the survey notification. Several between-student categorical measures were also indicated via dummy coding: university (one of three anonymized institutions), sex (female, male), race (Asian, Black, Latinx, multiracial/other, White), and first-generation status (no, yes). High school GPA on a 4.0 scale was also included.

Table 1 Quantitative measures used in this study

Construct	Response Options	Coding	Mean
Studying/homework	Yes, No	Categorical	0.18
Attending class	Yes, No	Categorical	0.14
Watching TV/online video content	Yes, No	Categorical	0.12
Socializing	Yes, No	Categorical	0.10
Sleeping/resting	Yes, No	Categorical	0.10
Eating	Yes, No	Categorical	0.08
Social media/text/video chat	Yes, No	Categorical	0.07
Working for pay	Yes, No	Categorical	0.07
Commuting/traveling	Yes, No	Categorical	0.07
Personal care/grooming	Yes, No	Categorical	0.06
Doing errands/chores	Yes, No	Categorical	0.05
Extracurriculars/co-curricular engagement	Yes, No	Categorical	0.04
Reading/internet browsing	Yes, No	Categorical	0.03
Video games/gaming	Yes, No	Categorical	0.03
Taking care of family	Yes, No	Categorical	0.02
Exercising	Yes, No	Categorical	0.02
Intimate relations	Yes, No	Categorical	0.01
Prayer/worship/meditation	Yes, No	Categorical	0.01
Positive well-being (composite of happy, excited, confident; $\alpha = 0.84$)	Not at all, a little, somewhat, a lot	Continuous	2.35
Negative well-being (frustrated, sad, anxious, stressed; $\alpha = 0.84$)	Not at all, a little, somewhat, a lot	Continuous	1.71
High school GPA	[Coded on a 4.0 scale]	Continuous	
Sex	Female, Male	Categorical	
First-generation college student	Yes, No (defined as no parent/guardian having a postsecondary degree)	Categorical	
Race	Asian, Black, Latinx, Multiracial/Other, White	Categorical	
University	Institution 1, Institution 2, Institution 3	Categorical	
Week of the semester	[Number of the week in that semester]	Categorical	
Day of the week	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	Categorical	
Time of day	Morning (before 12pm), Afternoon (12-5pm), Evening (5pm or later)	Categorical	
Time elapsed after survey invitation	Natural log of the number of seconds from survey invitation to start of survey	Continuous	

Note Participants were asked to report their time use and well-being at the moment that the survey notification was sent; participants were able to report engaging in multiple activities at the same time. Timing information (e.g., day of the week) was obtained from the app used to conduct the survey, while student-level information and university were collected from university system records

Qualitative Data

Qualitative data were collected from students who met the same eligibility criteria outlined above from two cohorts that started college in Fall 2021 or Fall 2022. Students were recruited through a combination of email invitations and in-person efforts at these universities (e.g., by visiting first-year seminars targeted toward low-income students). Students

were offered $40 gift cards per interview as an incentive for participation. This process yielded a total of 273 one-on-one interviews conducted with 160 low-income students, who participated in 1–2 interviews during their first year of college. Among participants, 34% identified as White, 28% Latinx, 18% Black, 13% Asian, and 9% "other" or mixed race,[2] 58% identified as women, 36% men, and 6% non-binary, and 64% were first-generation college students. Pseudonyms were assigned to students to promote confidentiality.

Qualitative data were collected through semi-structured, one-on-one interviews that lasted approximately 60 min each. Typically, interviewers emailed an invitation to participants and arranged a mutually agreeable time to conduct a Zoom interview. The interview was audio recorded and professionally transcribed. Interview protocols were developed in dedicated meetings by a team of researchers who came from diverse backgrounds across income, social class, gender, race, sexualities, and disciplinary and methodological expertise. Protocols were designed to explore students' college perceptions and experiences; these included questions related to how they spent and navigated their time, how they felt while engaged in various activities in college, and factors that influenced their well-being.

We also drew upon our mixed methods design at the qualitative data collection stage by leveraging emerging trends identified from the time use surveys to inform the line of questioning in these interview protocols, which is consistent with an explanatory mixed methods design (Creswell, 2014; Ivankova et al., 2006; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Teddlie, 2003). Emerging time use survey results informed the development of follow-up interview questions to explore how specific time use experiences shaped well-being (e.g., studying, working, socializing). Example interview questions included, "Walk me through your day yesterday from the time you got up until you went to bed," with follow-up questions like, "Tell me how you feel when you are spending time [in class/studying/ homework]" as well as broader-based questions such as, "What's something that's been really hard to navigate this semester?"; these questions often elicited responses pertaining to time management, time navigation, and well-being, including, as shown in our findings, meta-factors related to time navigation and well-being that spanned various college experiences.

Analyses

Quantitative Data

For the time use survey data, multilevel random effects analyses were used to examine the relationships between time use and well-being (for more information about this approach, see Heck & Thomas, 2020; Snijders & Bosker, 2012). Specifically, individual survey responses were modeled at level 1, and these observations were modeled as nested within students at level 2. These random effects models are akin to hierarchical linear models with group-mean centered predictors (Cheslock & Rios-Aguilar, 2011), so these analyses include both within- and between-student variation in time use. Separate analyses were conducted for predicting positive and negative well-being. Independent variables at level 1 consisted of each form of time use, week of the semester, day of the week, time of day, and time before starting the survey response. Level 2 predictors were race, sex, first-generation status, high school GPA, and university attended. University could be conceptualized as a third level within the analysis, with students nested within universities; that said, the use of dummy variables

[2] Percentages do not add to 100 due to rounding.

here accounted for all between-institution differences. Preliminary analyses showed that the findings were robust to different analytic decisions, including the choice of control variables and the use of random effects models versus fixed effects models (i.e., that accounted for all between-student variance and only examined within-student variance; see Allison, 2009).

To promote triangulation with the qualitative results within this mixed-methods design and to enable meaningful, in-depth engagement with the many various college experiences measured, we focus our discussion of results on the eight most common activities in which these participants engaged (i.e., studying/homework, attending class, watching TV/online video content, socializing, sleeping/resting, eating, social media/text/video chat, and working for pay). We also conducted analyses that tested interactions between each type of time use and precollege characteristics to explore whether there were differences in the relationships between these time use variables and well-being across race, sex, first-generation status, and high school GPA.

Qualitative Data

To analyze qualitative interview data, interview transcripts were uploaded into Dedoose analysis software and coded iteratively. Following qualitative methodological processes outlined by Boyatzis (1998), interview data were coded both deductively and inductively, and themes were developed. Over the course of two years, a team of 5–6 researchers deductively coded the 273 interview transcripts. The team of coders included faculty, a postdoctoral researcher, doctoral students, and an undergraduate student. The coders were trained on a codebook through an ongoing interrater reliability process to promote fidelity to code definitions and quality of analysis. After an initial interrater reliability training, the coding team met periodically to discuss emerging issues related to coding (e.g., identifying new inductive codes). The deductive codebook definitions were developed through a thorough review of the literature on various topics, including time use, time management, and well-being (Astin, 1984; Diener, 2009; Hellsten, 2012; Proctor et al., 2006; Ryan & Deci, 2001).

Researchers leveraged the deductively coded data around time use and well-being to conduct an initial exploration of how time spent on various activities during college may affect low-income students' well-being, guided by preliminary findings from the time use survey. This approach represented a mixing of methods at the study's design and analysis phase (Creswell, 2014; Onwuegbuzie & Teddlie, 2003). After a discussion among researchers who conducted the initial review of deductively coded data and ongoing discussions with the quantitative research team, several emergent inductive ideas were identified related to time use and navigating time commitments that appeared to shape well-being and offer explanations for the relationships identified in the survey findings. These included, but were not limited to, navigating "time constraints," "balancing time commitments, trade-offs," "finding meaning" in activities, and "adjusting to a routine." Next, deductively coded data excerpts were organized within an Excel matrix, reflecting the emerging inductive codes identified by the team of researchers in our initial exploration of the qualitative data (e.g., "adjusting to a routine", "time constraints"). This analysis resulted in the identification of four preliminary clusters of codes that formed the basis of our themes explaining how time use related to students' well-being: "routine, prioritizing, and planning," "reflection and mindset," "relaxation and combating stress," and "sense of care."

A detailed memo was written for the clusters of codes that became our emergent themes. Memoing included data reduction and theme exploration that further aided in sense-making

of qualitative data (Boyatzis, 1998; Onwuegbuzie & Teddlie, 2003). The memo content was subsequently compared and contrasted to identify relationships or overlap between themes and their connections to the quantitative findings. Themes were subsequently further refined (or absorbed) into two overall broad themes that helped explain the relationship between students' college experiences and well-being (as described below).

Limitations

Some limitations should be noted. First, while the multi-institutional sampling certainly constitutes a strength, all participants were attending institutions within the same state university system, so it is unclear how broadly these findings might generalize beyond this context. Second, the time use analyses examined the link between student experiences and subjective well-being that occurred within the same moment. This approach has the benefit of leveraging considerable within-person variation (in addition to between-person variation), but it does not indicate whether a particular experience may have a longer-term relationship with well-being or other outcomes (e.g., encountering a challenging concept in class may feel difficult at the time while also leading to subsequent learning and growth). The qualitative portion of this study is therefore important for understanding such dynamics. Third, it is important to note that most of the quantitative portion of this study examines students' momentary uses of time rather than total time spent per se. These thousands of assessments can be compiled to determine the overall descriptive frequencies of how students spend their time, but the multilevel analyses intentionally model students' experiences at a particular point in time and therefore do not examine the total amount of time that each student spends overall. Finally, we elected to focus on the eight most commonly reported forms of time use to triangulate with our qualitative data and to enable meaningful engagement with our mixed methods findings within the scope of a single study. While this is a compelling rationale for our decision, future research could explore in more depth the link between less common forms of time use and their contributions to well-being.

Findings

Findings from our explanatory, mixed methods study are presented below. First, we present the quantitative findings that answer our research question about the link between low-income students' well-being and commonly reported experiences during their first year. Second, we identify and describe factors that shaped the relationship between low-income students' time use and well-being. Connections between the qualitative factors that aid in explaining the relationship between students' well-being and college experiences identified quantitatively are noted throughout the explanatory portion of our findings and further elucidated in our Discussion section.

Quantitative Findings

Table 1 displays the proportion of responses for each use of time; these values add up to slightly more than 1.0 as a result of rounding and allowing students to select multiple responses within the same survey. The two most common uses of time involve academics

(studying/homework and attending class). Other common uses of time are interpersonal in nature (socializing and social media/text/video chat), reflect efforts to meet financial obligations (working for pay), describe basic life necessities (sleeping/resting and eating), and relaxing (watching TV/online video content). These reflect the eight most common forms of time use reported by students. Additional life obligations are also well-represented in students' responses, as commuting/traveling and doing errands/chores are both within the next three more common experiences.

The results of the primary multilevel analyses are presented in Table 2. Among these common uses of time, socializing had a significant and favorable association with both forms of well-being (i.e., it was positively related to positive well-being and inversely related to negative well-being). In contrast, studying/homework, attending class, and working for pay predicted significantly worse well-being in terms of both outcomes. Other uses of time had differential results across the two well-being outcomes. Eating predicted greater positive well-being, but it was not significantly associated with negative well-being. Students' engagement with social media, texting, or video chat was associated with more negative well-being, while it was unrelated to positive well-being. Sleeping/resting was inversely related to both outcomes, which is likely a product of students experiencing fewer emotions overall while sleeping or resting. In terms of the magnitude of these relationships, the links between socializing and positive well-being and between studying/homework and negative well-being were particularly strong, with multilevel coefficients for these uses of time of roughly a half standard deviation.

We also examined interactions to determine whether the relationship between time use and well-being within our sample of low-income students differed by student characteristics. Among the characteristics we examined, very few significant findings occurred for race, sex, or high school GPA, but a fair number of statistically significant differences were observed for the relationship between time use and well-being by first-generation status. Table 3 displays the results of these interactions; first-generation students exhibited a significantly stronger negative association between studying/homework and positive well-being, and they also had significantly greater negative well-being (i.e., more adverse outcomes) than continuing-generation students from attending class, studying/homework, and working for pay. Notably, these academic and employment experiences were also the most adversely related to well-being in the primary analyses.

Qualitative Findings

Qualitative analyses shed light on two primary meta-factors that shaped the relationship between students' time use and their well-being: (a) structuring time and developing a routine, and (b) the power of reflection and meaning-making. Connections to quantitative findings (i.e., adverse relationships between studying/homework, class, and working with both well-being outcomes; favorable relationships between socializing and both well-being outcomes) are noted throughout our qualitative findings and reflect mixing methods at the data interpretation phase (Creswell, 2014; Ivankova et al., 2006; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Teddlie, 2003). Consistent with the quantitative results, academic activities (e.g., class, studying), working, and social activities were common forms of time use students discussed in their interviews and were connected to low-income students' well-being, and thus are prominently reflected in our qualitative themes.

Table 2 Results of primary multilevel analyses predicting positive and negative well-being

	Positive Well-Being		Negative Well-Being	
Predictor	*B*	*SE*	*B*	*SE*
Attending class	−0.123**	0.047	0.304***	0.047
Studying/homework	−0.297***	0.041	0.448***	0.040
Watching TV/online video content	0.020	0.042	−0.032	0.042
Social media/text/video chat	−0.094	0.049	0.112*	0.049
Sleeping/resting	−0.289***	0.051	−0.149**	0.050
Eating	0.214***	0.048	−0.069	0.047
Socializing	0.604***	0.044	−0.182***	0.043
Working for pay	−0.151**	0.058	0.244***	0.057
N observations	4,296		4,290	
N students	200		200	

Note The analyses modeled survey responses (level 1) as nested within students (level 2). Control variables were university, race, sex, first-generation status, high school GPA, the week of the semester, the day of the week, the time of day, the amount of time elapsed after survey invitation, and other time use variables (commuting/traveling, doing errands/chores, exercising, extracurricular/co-curricular engagement, intimate relations, personal care/grooming, prayer/worship/meditation, reading/internet browsing, taking care of family, video games/gaming). The full results that include control variables are available upon request from the authors. Each outcome was standardized with a mean of zero and a standard deviation of one, so the coefficients for these binary predictors can be interpreted as Cohen's *d* effect sizes or standardized mean differences

*$p<.05$ **$p<.01$ ***$p<.001$

Table 3 Results of multilevel analyses with first-generation interaction terms predicting well-being

	Positive Well-Being		Negative Well-Being	
Predictor	*B*	*SE*	*B*	*SE*
First-gen x attending class	−0.006	0.091	0.190*	0.089
First-gen x studying/homework	−0.248**	0.082	0.197*	0.080
First-gen x watching TV/online video content	0.059	0.084	−0.020	0.083
First-gen x social media/text/video chat	0.131	0.098	−0.045	0.096
First-gen x sleeping/resting	−0.023	0.099	0.099	0.098
First-gen x eating	−0.026	0.096	0.132	0.094
First-gen x socializing	−0.100	0.087	0.134	0.086
First-gen x working for pay	−0.153	0.116	0.442***	0.114
N observations	4,296		4,290	
N students	200		200	

Note The analyses modeled survey responses (level 1) as nested within students (level 2). Control variables were university, race, sex, first-generation status, high school GPA, the week of the semester, the day of the week, the time of day, the amount of time elapsed after survey invitation, all time use variables, and interactions between first-generation status and other uses of time (commuting/traveling, doing errands/chores, exercising, extracurricular/co-curricular engagement, intimate relations, personal care/grooming, prayer/worship/meditation, reading/internet browsing, taking care of family, video games/gaming). The full results that include control variables are available upon request from the authors. Each outcome was standardized with a mean of zero and a standard deviation of one, so the coefficients for these binary predictors can be interpreted as Cohen's *d* effect sizes or standardized mean differences

*$p<.05$ **$p<.01$ ***$p<.001$

It is critical to note that the qualitative explanations for the link between students' time use and well-being described below were broad meta-factors that undergirded how students navigated time and shaped students' experiences while engaged in various common college

activities (e.g., class, working), with consequences for their well-being. For example, much of the stress and ill-being associated with engaging in specific college activities identified quantitatively (e.g., class, homework, work) was often attributed by students to pervasive challenges they faced navigating their multiple competing time commitments and goals in college. In the case of both themes described below, a consistent thread was the potential of educators in promoting low-income students' well-being as they navigated their time during college. Quotation attributions with student pseudonyms are noted directly or within parentheses.

Theme 1: Structuring Time and Developing a Routine

Students commonly attributed the link between time spent on activities such as studying/homework, class, and working and their well-being to the development of a routine, planning their time, and prioritizing multiple competing time commitments in college. Generally, students perceived that having a routine reduced their stress and anxiety and made them feel better about how they were spending their time in college (e.g., in class, doing homework). Sadie reflected a common refrain among students we interviewed, noting that once she established a well-planned college routine, she "[felt] like I got in a little bit of a groove. I got a schedule, and it was easier…" Consistent with our quantitative findings, when students did not have a routine or experienced challenges navigating their time and priorities during their college transition, they often felt stressed and unhappy while engaged in various activities (e.g., classes, homework, working). For example, like many other students, Ama observed that a lack of a routine made her feel "overwhelmed with everything" such as class and homework, with implications for her well-being.

One of the biggest challenges and sources of stress students discussed as they transitioned to college was how to structure their time. The lack of a formal structure for their day led students to feel stressed and frustrated (i.e., ill-being) while engaged in various activities, like class or doing homework. Aurora, like many other students, explained it was challenging to navigate her time commitments because college offered a new kind of freedom and new responsibility for structuring her time that stood in contrast with the highly-structured, externally imposed routine of high school. The lack of structure in college negatively affected her well-being until she was able to develop a routine that worked for her:

> I think most of it was like, I had so much free time given to me that I didn't know how to manage it. I felt like I was falling behind in assignments, but when I actually looked at what I had to do, I didn't really have much to be doing and be worrying about because it was like the first two weeks. But even just — I don't know what it was. I think I was so used to my routine in high school where it's like "Oh, go to first class, second class, lunch, and then your last two classes." I think it was just like, trying to break that habit that was a struggle for me.

Students often commented on how different college was from high school "[where you] woke up at a certain time every day…they made you go to lunch at a certain time…[you] had that system and [you were] doing it every day" (Colton). However, students noted "it's a really big difference [in college]" and they often needed to figure out how to structure their own time independently (Colton). Students had varying degrees of success with developing

a routine that worked for them. The lack of formal structure led students to feel stressed and anxious while engaged in their various time use activities like work and class during their college transition.

Navigating Priorities Navigating priorities was part-and-parcel of planning out one's time commitments and developing a routine. Students struggled to prioritize the many things competing for their time in college, which contributed to feelings of frustration and anxiety while engaged in those activities (e.g., homework, studying, working), helping to explain the unfavorable links to well-being identified in our quantitative results. Students noted the importance of prioritizing what needed to be done to combat stress and that "taking things one step at a time" was "good for not getting overwhelmed, which can be quite easy to do when you're struggling [balancing] social life, doctor's appointments, so much school" (Rio). Students frequently described challenges related to identifying priorities and assessing trade-offs when making those decisions that negatively impacted their well-being while engaged in class, homework, work, and more. Keiko reflected on how her well-being was affected by the hard choices she made about paid employment and spending time with family:

> I just feel like everything is just thrown everywhere and it is stressful, because now I have to decide things and make time. Oh, I picked up a shift [at work]. Now I can't spend that time with my family that I probably should have spent, or I spent this time with my family and now I missed a shift. Now, I'm like, how will I pay for this? [I] t's just kind of like an up and down roller coaster that I'm sick of… It's…annoying and stressful….

Like others, Keiko grappled with navigating competing priorities. Consistent with our quantitative findings, Keiko felt frustrated while working and missing time with family, but she also felt anxiety about not working when she was with family due to concerns about meeting her financial responsibilities.

Further complicating matters, students noted that the prioritization of their time in college differed from high school. Danh described how when he first came to college, he "just didn't focus on academics," because he succeeded in high school without much planning, effort, and dedicated time for academics. However, when his first college grades came in, "that's when the stress really came on." Like many students, Danh realized he had to prioritize coursework and started "going to the tutors basically every day, and spending…hours studying," which was "a real adjustment" compared to his high school routine and one that initially caused him stress. Students commonly felt stressed while engaged in various college experiences (e.g., studying, homework) as they navigated how to best prioritize and structure their time in their new environment. This stress is consistent with the unfavorable links between these college experiences and students' well-being identified quantitatively.

Many students noted how planning out their priorities in advance and developing a routine that worked for their individual needs helped mitigate stress associated with their various time commitments. Grace shared that "knowing when I need to start [an assignment] to get it done" helps her navigate time commitments (e.g., class, homework) so that she does not "have to stress about it in the moment"; conversely, not having a plan led her to feel stressed while engaged in those various time use activities. Prioritizing assignments and having a plan allowed her "to push some things off" and helped her deal with the stress of

her commitments and assignments in the moment rather than thinking she must "do everything at once." Still, students frequently discussed an element of trial and error in this process: "you're not gonna get it right the first time and it's gonna take a lot of tries" (Abigail). Students noted the importance of being flexible with their routine and priorities, so that "if things change you can always change it," rather than further stressing out while engaged in particular college activities when plans need to change as a result of new information or unexpected circumstances beyond their control.

Valuing Time Spent on Rest and Social Activities Consistent with the strong, favorable relationship between socializing and well-being identified in our quantitative analysis, students emphasized the importance of prioritizing and structuring into their routine time to socialize, relax, and do the things they enjoy to support their well-being. Given the stress and negative well-being associated with many obligatory academic activities, such as attending class and studying, rest and social activities offered meaningful opportunities to enhance students' well-being in college. Sadly, many students only embraced these realizations when they experienced burnout (i.e., ill-being). Naseer talked about the importance of scheduling time to socialize to help destress and relax in the context of the overwhelming number of study hours and assignments they had to do:

> At first [college] felt really intense, it felt like too much and stuff, a lot of I have this to do, I have this to do…like every night staying up late and doing stuff to the point that I felt like worn down…So then I decided that even though I have this, this, this, this, just I would let it go and do my time management, like I'm going to go work out for this amount of time, like have a schedule for working out and stuff or play soccer. I would play soccer a lot. Or do other stuff, like go to a club meeting and stuff…I got burnt out so fast. So I said, oh, this is not good, so that's when I decided to be involved in some activities on campus.

Students typically talked about the pressure of their multiple time commitments and recognizing how important it was to do social, fun, and relaxing things as part of their routine to support their well-being. That is, students started to think about social and down time as necessary for their well-being and college success, not simply a distraction from what they typically viewed as obligations that often had a negative link to their well-being, like homework. Bobby shared more:

> I was in the [student organization] meeting, and then just a thought came to me, "Why am I here? I should be doing my homework right now. Like I should go." And then I remembered, "No, I don't have to. I can't, I can't. I have to relax and not stress myself out." And it kind of helped after that, because eventually I was able to forget all that, kind of put the worries behind me, and I was able to kind of have fun and relax….

While some students personally realized the importance of building in time to socialize or relax in their routine, many others only came to this realization through conversations with–and support from–family, peers, or college educators that encouraged them to prioritize non-academic/work activities in their routine to ensure they were exposed to opportunities that supported their overall well-being and success. These dynamics may be particularly relevant to first-generation low-income students who may not have the same guidance from

family around how to structure in opportunities to socialize among their many other time use obligations (e.g., homework) and who, according to our quantitative results, exhibit especially adverse outcomes from engaging in academics and paid employment. Students commonly benefited from educators giving them a kind of permission and resources to do the things they enjoyed as part of their day as a way to counteract stressors and promote well-being.

Support Tools and Structures Finally, access to support tools and structures (e.g., transition programs) aided many low-income students in structuring their time in college, which included time to socialize, do homework, and work. Appropriate time navigation tools helped students "learn to cope" (Eliana) with stress associated with their multiple competing time use obligations (e.g., class, studying). Students frequently discussed ways to "cope" with the stress associated with their multiple time use obligations described in the quantitative results (e.g., homework), and they often noted that they felt more at ease and less anxious (i.e., improved well-being) while engaged in those activities if they had tools to create a routine and identify priorities, since that relieved anticipatory stress and provided a better sense of what to expect day-to-day. Jordi's college transition story illustrates how a course provided them with tools to develop a routine that in turn positively impacted their well-being:

> I was just your typical high schooler, just procrastinating. I'd rather go out and have fun, and then I'd worry about my homework…And I kinda still carried those habits for the first week or two of college, maybe a month into it, honestly. And I saw that it made things really hard. I was actually feeling really stressed. And I was like, "I shouldn't feel this stressed already." But I knew it was just because I was doing what I used to do.

Things started to turn around when Jordi was exposed to time navigation tools in a course:

> [W]e were reading this book about the fundamentals of learning, something like that. And it talked a lot about previewing and just planning ahead and how those just – just making a planner, just how simply making a schedule of your day or week or month will help so much with college and organizing your homework and classes and when you have important things to do and meetings. [T]hey were right because it helped me a lot.

Access to time navigation tools and leveraging those tools to identify priorities, create lists, and develop schedules helped students like Jordi deal with stress related to time use and ameliorated threats to their well-being.

Nonetheless, many low-income students noted that they did not have a lot of the same support as their peers, which shaped their time use and consequently their well-being. When students did not have access to time navigation and planning tools—as was the case for many of the low-income students we interviewed—they were often frustrated or stressed in the moment while engaged in classes, homework, or other activities, consistent with our quantitative findings. Russ discussed how peer interactions made him realize that he did not have the same kind of educational support to structure and navigate his time commitments:

> I should really know [how to do] this right now, but I don't remember ever having heard [about how to do all this work] …'Cause my roommates all came from prep or college prep schools. So, they're like, "This is less work than I did in high school.' And I'm like, 'All right, this is three times as much as I did in high school." So, I just wish – looking back…I just wish I had learned earlier how to handle [all this].

While some students developed routines and priorities independently through a protracted process of trial and error, learning effective time navigation tools was often a result of students' engagement with college transition programming, first-year seminars, or a key educator or family member that offered specific guidance and access to time navigation tools. In turn, access to these time navigation tools helped alleviate some stress associated with studying, class, and work. For example, Abigail highlighted the TRIO program and how TRIO staff helped her prioritize her commitments and develop an effective routine. She shared, "[Because of what I learned from TRIO], I plan out my weeks. I plan three weeks ahead. I have assignments and things that have to get done." Emily similarly noted how another college transition program told her to "bring a planner" and to take "the syllabus from all my classes and [write] them down on my planner," which made spending time on her classes, assignments, and studying "a hundred times easier." Thus, college programming and initiatives that offer targeted support around structuring time and prioritizing commitments were invaluable to students because it reduced stressors and improved their well-being. This qualitative finding, in particular, may help to explain the quantitative results indicating that *first-generation* low-income students often fared even worse on well-being while engaged in academics and paid employment, given that first-generation students do not have family members who attended college to turn to that can provide contextualized insight for navigating time commitments during college.

Theme 2: The Power of Reflection and Meaning-Making

Reflection and meaning-making around time use also shaped low-income students' well-being while they engaged in their various commitments in college (e.g., homework, class). Students commonly explained that they entered college with a particular set of beliefs about the "correct" way to spend their time that often conflicted with their multiple competing time demands and obligations or reflected unrealistic expectations such as being the perfect student. Many students grappled with the messages they received about what it meant to be a good student and how they should be spending their time in college and described how a perfectionist approach to their activities in college negatively influenced how they felt in the moment while in class, doing assignments, and working, with negative consequences for their well-being. This dynamic may help explain the quantitative results showing academic activities and working were adversely associated with well-being. Through reflection and meaning-making—often with guidance from a key educator, counselor, or advisor—many students shifted their perceptions and goals with regard to how they spent their time and why they were spending time on the activities they engaged in, which subsequently improved their well-being while engaged in those time use experiences.

To illustrate, Rio noted how having a perfectionist approach toward classes, studying, and homework contributed to his feelings of "burnout" (i.e., ill-being) while engaged in those activities. However, through Rio's reflection, he shifted away from goals of perfec-

tion and came to realize "[y]our self-worth isn't determined by your grades." As such, Rio, like many other students, tried "to give [him]self more grace and to be less hard on [him]self when it comes to [his] schoolwork." This kind of shift helped students set realistic goals, manage expectations and stress, and avoid burnout (i.e., ill-being) while engaged in essential college activities like studying and homework. Carissa similarly commented how her "idea of a good student and academic success has changed from high school to college" and that she was a "perfectionist" in high school. However, through reflection and meaning-making during college, she shifted her perceptions about time use and her goals, which in turn contributed to her well-being:

> I'm going to end this semester with at least one B and I'm not upset about it because I know I tried hard in that class. But it's also like I'm working. I'm doing an internship… I have a social life. I do a bunch of other things and then I have to take care of my health at the same time. I kind of try to give myself a break. Like being well rounded doesn't mean being perfect at everything is kind of what I've learned.

Reflection and meaning-making often led to students like Carissa to set more realistic college goals and to focus their time on learning, growth, and getting a well-rounded education. This shift in approach helped mitigate stress otherwise associated with how they were spending their time for many students.

When students did not have a clear plan or had unrealistic college goals, time spent on various college activities was more stressful and threatened their well-being. Gabriel, for instance, entered college thinking it "was gonna be impossible, which was kind of a thing I got in my head about when I was getting anxious." He shared that he had "some pretty scary classes that I was gonna have to take, and I was kind of getting worked up about that." However, Gabriel eventually reflected on why he was frustrated and anxious, and he shifted his approach: "you can come at it with a better mindset, a clearer head, and have better thoughts and ideas, and then it's easier to [do well in college]." Students like Gabriel had more favorable well-being while engaged in various college activities when they had opportunities to reflect on and process their feelings of anxiety and stress; articulate their thoughts, ideas, and goals; and approach college activities (e.g., academics) with a clear plan. Conversely, students were worse off in terms of well-being when they did not have these opportunities for reflection and meaning-making—our quantitative results suggest that there are many students who may not have these beneficial opportunities. Our finding highlights the value of structured reflection and meaning-making activities as vital academic and well-being resources for students.

Students also often talked about the importance of reflecting on and recognizing the accomplishments achieved while engaged in various college activities, and how that supported their well-being. For instance, Jasper explained, "I only spent five hours studying today, but I know people who only did like 30 minutes of homework and then called it good." Through this reflection, Jasper "recognize[d] what [he was] doing right," which positively shaped his well-being. While he initially stressed about "only" studying for five hours, Jasper paused to recognize his work and accomplishments—which contributed to his well-being. This offers potential insight for our quantitative findings that suggested the negative association between well-being and academic activities or work. Specifically, if a student, like Jasper, stopped short of reflecting on the accomplishment or success of hav-

ing spent considerable time doing homework and instead focused on what *more* they could have done, they would be likely to experience stress and ill-being while engaged in those activities. It was the opportunity to reflect that ameliorated the stress associated with doing homework and studying, something that not all students were proactively encouraged to do by educators nor did on their own. Similarly, other students talked about crossing items off their to-do list and taking a moment to celebrate and reward themselves for completing class or work tasks as a way to support their well-being. Rebecca explained she has "a to-do list right now of just everything I need to get done, the due date" and how "it feels so nice" crossing things off her list. Reflecting on what has been accomplished generally contributed to positive feelings about the time students spent on tasks and often contributed to students' overall well-being.

Finally, many students engaged in reflection and meaning-making with the help of an educator, counselor, or college support program, thereby illustrating the important role that educators and institutions play in supporting students' well-being. For example, students noted the valuable role of college support programming in helping them develop tools for reflection and meaning-making that bolstered their well-being while engaged in college activities as a result. Elena discussed a college transition program that required her to read about emotional well-being "that talks a lot about mindset and controlling your thoughts" and understanding "your negative thoughts and understanding your emotions and going through them instead of trying to avoid them." Many students found that accessing structured support and resources like this helped them reflect on their stressors and develop tools to navigate their commitments in ways that mitigated college stress while engaged in those time use activities. Educators also often served as crucial support agents that helped students understand and address factors that negatively affected their well-being through one-on-one meaning-making conversations (in advising sessions for instance) and helped students pause and reflect on their accomplishments (e.g., succeeding in a course)—which contributed positively to their well-being. Unfortunately, many students did not have this kind of support, which may help explain the quantitative results indicating the generally unfavorable relationship between time spent in common college activities (e.g., class, studying) and students' well-being.

Discussion

Educators and policymakers alike should be highly concerned with low-income students' well-being, not only from a moral standpoint, but also because students' well-being may contribute to academic achievement, retention, and graduation (Arria et al., 2013; Eisenberg et al., 2009). This sequential, explanatory mixed methods study examined how low-income students' college experiences were associated with their well-being and identified factors that shaped the relationship between students' time use and well-being. In summary, we found that several common college experiences including working, attending class, studying/homework, and socializing were consistently and significantly related to low-income students' well-being. Structuring time, developing a routine, and reflection and meaning-making were key factors that shaped students' experiences in these activities and consequently their well-being. Our findings also suggest that the lack of formal structure to navigate various competing demands on low-income students' time and unrealistic expecta-

tions/goals (e.g., academic perfection) posed challenges to their well-being while engaged in these various college activities. Given the significant share of low-income students going to college (Cahalan et al., 2022; Fry & Cilluffo, 2019), our findings highlight the urgent need to prioritize support for low-income students' well-being and college success. Moreover, our study considers low-income students' time use from an equity frame, acknowledging that these students have multiple responsibilities, obligations, and systemic constraints that require them to negotiate how to spend their time in college, and calling upon institutions to take responsibility for supporting their well-being. This study supplies critical empirical information that can inform educator efforts to support low-income students' well-being.

College Experiences and Well-Being

Our first research question examined the link between low-income students' commonly reported activities in college and their well-being. While some forms of time use were inconsistently related to well-being or not significantly related at all (e.g., watching TV or online content), we found that attending class, studying or doing homework, and working for pay were consistently and adversely related to low-income students' well-being. Activities that one might expect low-income students to be frequently engaged with based on our review of the literature were uncovered in our findings, such as working for pay. Others, like commuting (e.g., traveling to campus, or using public transit) or doing errands/chores (e.g., housework at home) were also commonly reported, but were just outside the top eight activities low-income students most frequently reported that we focused on (e.g., studying/homework, class, working, socializing).

Our findings lend further clarity to the mixed results of past research examining well-being and engagement in academic activities and employment described in the literature review (Ayala et al., 2017; Bowman, 2010; Novo et al., 2020; Ridner et al., 2016), with an explicit focus on low-income students. It is notable that several of the adverse relationships identified between time use and well-being were even worse for low-income students who were also first-generation college students. Many low-income and first-generation students have not had the same access to precollege guidance about structuring their time in college and have been socialized to time differently from their economically-privileged counterparts (Calarco, 2018; Lareau, 2011). As such, our findings illustrate postsecondary educators' important role in offering interventions and tools that help low-income and first-generation students navigate their time in college (e.g., time navigation; Hypolite et al., 2021). In many ways, these tools help students cope with norms and environments that undermine their well-being in the short term. While these efforts will not overcome postsecondary systems that have long underserved low-income and first-generation students, educators and institutions must be accountable for supporting well-being and success for the students they admit (Kitchen & Williams, 2019).

Furthermore, extant research highlights the positive link between well-being and time spent on social and leisure activities (Bowman et al., 2019; Doerksen et al., 2014; Kilgo et al., 2016). Our study affirms these findings among low-income students, indicating that socializing is consistently, strongly, and favorably related to their well-being. Opportunities to socialize with others–such as through intramurals, classroom engagement, and social activities–appear to be a promising way to promote low-income students' well-being. Such opportunities may also offer critical counterspaces that are crucial for the well-being of low-income students who also hold racially minoritized identities (Brooms et al., 2021; Luedke,

2023; Taylor & Turk, 2019; Tichavakunda, 2021). Navigating opportunities to socialize and connect with others may be particularly challenging for low-income students who are commonly first-generation in college and do not have access to the same guidance as their continuing generation peers about taking advantage of opportunities to socialize in college (Kitchen et al., 2021). Moreover, low-income students often do not have the financial resources to access common spaces where socialization might happen such as Greek life (e.g., paying dues) or going out to dinner with friends. Thus, it is the responsibility of educators to pay particular attention to supporting low-income students to help find and facilitate opportunities to socialize that work for the students' situations and resource constraints.

Navigating Time Use Activities and Well-Being

Our second research question sought to identify factors that shaped the relationship between low-income students' time use and well-being. Our qualitative exploration found that developing an adaptable routine that worked for the individual student's needs and competing demands for their time, as well as opportunities for reflection and meaning-making, shaped the ways in which students' time use affected their well-being. Consistent with the tenets of our conceptual framework, time navigation, low-income students commonly discussed their many competing time commitments and the challenges they faced with structuring their time, prioritizing obligations, and finding time to socialize and relax in pursuit of wellness. Experiencing an abundance of time use obligations (e.g., homework) without a clear plan for structuring their time diminished students' well-being while engaged in various college activities, whereas developing a routine often ameliorated some threats to students' well-being and reduced stress and frustration while engaged in common college activities like class or doing homework. An important thread that emerged in many students' discussion of developing a routine was the role of programming, tools, and support from educators in (a) helping students design a schedule that met their needs and accommodated their life circumstances, (b) identifying and documenting priorities, and (c) encouraging students to plan for time to socialize. Educators who foster these time navigation strategies should be sensitive to low-income students' many responsibilities and commitments beyond the immediate college environment, including family care responsibilities and off-campus employment (Goldrick-Rab, 2016; Vickery, 1977). Moreover, students with intersecting minoritized identities are often compelled to participate in student activism in order to advocate for racial or gender justice (Linder et al., 2019), which places further demands on their time. Thus, attending to low-income students' multiple identities and time demands will be critical considerations for educators as they support their time navigation efforts and well-being.

Moreover, we found that opportunities for low-income students to reflect on and make sense of their college time use experiences often mitigated threats to students' well-being by enabling them to find some joy in their time use experiences, to celebrate their accomplishments (e.g., studying, completing homework), to put into perspective their college goals, and to develop realistic expectations of themselves. Students who did not have opportunities to reflect on and make sense of their college experiences often found themselves to be stressed and frustrated while engaged in activities like studying, class, homework, and working. Unfortunately, students often came to these moments of reflection only after experiencing burnout or dealing with overwhelming challenges to their well-being. Not all students had the appropriate guidance, support, and structure to engage in this sort of reflec-

tion, and many were left to figure it out alone in reaction to such challenges. This finding suggests the importance of college educators providing structured opportunities and tools to encourage reflection through orientations, first-year seminars, proactive advising, residence life activities, or college transition programming.

Value of a Mixed Methods Approach

Our mixed methods examination offers a more complete, complex, and nuanced understanding (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Teddlie, 2003) of the link between low-income students' time use and well-being. Leveraging our mixed methods approach, we not only identified links between how low-income students are spending their time and the association with their well-being, but also identified underlying factors that shaped how students navigated their college experiences and its impact on their well-being. While the quantitative findings helped identify the association between common college experiences (e.g. studying, attending class) and students' well-being, the qualitative findings nuance our understanding of these relationships and shed light on promising strategies that contributed to well-being. For instance, low-income students commonly described challenges with navigating their multiple time commitments and unrealistic expectations as underlying factors that fostered stress and unfavorable well-being when engaged in various college activities (e.g., class, homework). When students had opportunities to reflect on their college goals and to develop adaptable routines, this ameliorated challenges to students' well-being.

To further illustrate the value of our mixed methods approach, it is helpful to compare two potential student time use and well-being scenarios. Take for example a low-income student who is struggling with multiple competing time use priorities (e.g., working for pay, studying/homework), has little time to socialize, who does not have a routine that works for their unique situation, and who grapples with unrealistic academic expectations of themselves (e.g., perfectionism). Based on our mixed methods findings, we would expect this student to likely be experiencing low well-being because they are engaged in multiple activities that are unfavorably related to their well-being (e.g., working for pay, studying/homework), have little time to socialize (which we found is favorably related to well-being), and they have not had opportunities to reflect on their goals/priorities and develop a routine that fits their unique circumstances. Compare this to a low-income student with a similar profile but who has access to a college transition program advisor, for instance. This advisor engages the student in structured reflection to help the student recognize their accomplishments, set realistic goals and expectations, and to aid the student in developing a flexible routine that suits the student's priorities, goals, and circumstances—including time to socialize. Our mixed methods findings suggests that this support would ameliorate the unfavorable ways this student's college activities might shape their well-being and would positively contribute to their college success.

Implications

With these considerations in mind, educators should be proactive in their efforts to help low-income students–especially new college students–in developing a routine. Yet students' routines should be accommodating enough to adjust to changing needs and commitments, in

particular because low-income students may have limited agency over some of their time use decisions (Bettencourt et al., in review; Hypolite et al., 2021). First-year courses, seminars, orientation, student programing, and advising offer important opportunities for this type of support (e.g., calendaring tools, prioritizing commitments, short- and long- term planning). Further, instructors can mitigate time-related stressors by being flexible with deadlines; discussing planning strategies for long term assignments (e.g., term papers), including how to prioritize academic tasks; and integrating opportunities for interpersonal engagement into courses given our finding about the positive link between socializing and students' well-being. Offering support around time navigation and routine building within group settings can also help normalize for low-income students challenges with time use and its effects on well-being, while also providing an opportunity for low-income students to share effective routine-building and time navigation strategies with each other. Faculty and staff should actively seek to connect low-income students to various resources that can support their well-being and ability to meet their basic needs to alleviate the stress associated with navigating their multiple competing time commitments and obligations (e.g., working for pay, studying), including food pantries, emergency grants, scholarships, counseling, student organizations, tutoring, study groups, and more. Supporting students by connecting them to resources tailored to their backgrounds and specific circumstances has been shown to reduce cognitive load and stress (Kezar et al., 2023), to the benefit of students' well-being.

While we found that socializing was positively linked to students' well-being, low-income students often have less time to spend on social activities due to financial and time constraints (Martin, 2012; Vickery, 1977; Walpole, 2003). Indeed, lower-income students are more likely to be working or engaged in family responsibilities that inherently compete with other forms of time use, like social activities (Corrigan, 2003; Kezar, 2011). Low-income students' multiple obligations often prohibit them from accessing spaces and relationships that nourish, recharge, and enhance their well-being. Proactive guidance from educators to help students identify specific socialization opportunities that work for their schedules (by reviewing together a list of available involvement activities/campus events, for instance) may help students navigate the many opportunities that abound and to take advantage of these opportunities where possible, to the benefit of their well-being. Moreover, institutions should consider designing flexible socializing opportunities (including in online spaces) that accommodate the busy, complicated schedules of working students and students with family commitments, which may increase access to much needed social activities to the benefit of their well-being. Educators should also connect students to socializing opportunities in existing spaces like classrooms and residence halls where many students already are and make relationship building central to the education process. Learning communities and comprehensive college transition programs offer promising spaces for integrated academic and social engagement that enable socializing (e.g., shared courses with paired social opportunities; Kezar & Kitchen, 2020; Kitchen et al., 2021) that may benefit low-income students' well-being. More broadly, increasing need-based financial aid could also be highly beneficial to help reduce students' time spent working for pay, which would help alleviate some of the time navigation challenges that low-income students face and enable them to engage in much needed socializing opportunities to the benefit of their well-being.

In terms of opportunities for reflection and meaning-making, educators should intentionally name and recognize how contextual factors limit students' agency over many of their time use decisions (e.g., working for pay, caretaking, rigid deadlines within coursework)

as part of guided reflections in classes, in advising meetings, first-year seminars, and orientations, to ensure that low-income students do not develop personal deficit narratives where they blame themselves for "poor time management" when in fact there are structural constraints on their time and obligations both in and outside of college they must navigate (Bettencourt et al., in review; Hypolite et al., 2021; Vickery, 1977; Wladis et al., 2018). Moreover, educators should consider incorporating set aside time—in first-year seminars and coursework for example—for guided reflection around how they spend their time and how that relates to achieving their college goals to avoid putting an additional time burden on students who often already have little time to spare. Finally, college educators should proactively encourage and provide space for students to engage in reflection to identify and recognize their achievements and successes resulting from the time they have devoted to studying, doing homework, and working to aid them in recognizing what they are doing well and to ameliorate threats to their well-being that may result from these activities. Given our findings about the negative consequences of perfectionism and unrealistic college expectations on students' well-being, instructors and advisors are well-positioned to normalize the challenging nature of college, to verbally articulate to students that learning and growth are an on-going process, and to ensure that students have a clear plan and access to campus resources they need to set and actualize realistic college goals in light of the many competing demands on their time.

While we found that developing a routine and opportunities for reflection and meaning-making were helpful in mitigating threats to well-being, these strategies are likely promising parts of a more comprehensive approach needed to fully support low-income students' time navigation and well-being. Our equity-oriented conceptual lens highlights the importance of considering contextual constraints on how students spend their time and its association with their well-being (Hypolite et al., 2021; Wladis et al., 2023). While many time navigation resources and tools helped low-income students deal with the effects of time use on their well-being, these are largely focused on individual behavior and often fall short of challenging oppressive systems that dictate definitions of time and how time should be spent that are culturally rooted, normative, and hegemonic (Gabryś-Barker, 2011; Hypolite et al., 2021).

In their efforts to support low-income students' well-being, we encourage educators to broaden their understanding of the constraints and stigmas faced by low-income students while navigating time commitments and responsibilities (Goldrick-Rab, 2016; Kezar et al., 2015; Soria et al., 2013). Any strategies and tools that low-income students are encouraged to employ to navigate their time use should take into account their unique situations and demands on their time that are often different from their higher-income counterparts (Goldrick-Rab, 2016). Specifically, guidance for low-income students around developing routines and reflecting on their time-use experiences should be sensitive to their backgrounds and contextual constraints on how they spend their time, why they spend their time on what they spend it on, commitments they have outside of college, and the–often limited–degree of agency they exercise over their time decisions. Finally, low-income students are more likely to hold racially minoritized identities and to be first-generation in college (Engle & Tinto, 2008; Taylor & Turk, 2019). To support low-income students navigating time use and well-being effectively, such support should be identity conscious (Pendakur, 2016) and factor in the role of other intersecting identities (e.g. first-generation, race) and the way they can shape low-income students' time navigation (e.g., structuring time, meaning-making) and well-being.

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