The Role of the Rural Context in the Transition to Adulthood: A Scoping Review

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Abstract

Rural adolescents are transitioning to adulthood in the context of growing disparities. To advance research on the social, behavioral, and contextual factors that influence rural young adult development, this study conducted a scoping review. The review sought to identify how researchers defined rural and how/which theories guided their work; how they integrated the rural context into the research design and methods; and how they used variables, concepts, and outcomes to measure rural experiences. Included articles were published between January 2009 and November 2020, included young adults ages 18–29, measured adult role achievement and/or behavioral health outcomes and reported on these outcomes for young adults, and focused on a rural sample within the United States. A systematic search of four databases resulted in 25 empirical articles for the inductive, qualitative analysis. Most studies used atheoretical approaches focusing on outcomes related to adult social roles, substance use, and mental health. Five themes emerged focused on the definitions of rural, the level of integration into the research design and method, and variables salient to the rural experience. These results reveal that future research should clearly define the rural context and better integrate the rural context into the conceptualization, design, methods, and implications of the empirical research.

Keywords Rural · Young adult · Transition to adulthood · Social development · Behavioral health

Introduction

Rural communities in the United States face increasing challenges, such as higher poverty rates, slower employment growth, aging populations, youth out migration, higher youth suicide deaths, and higher mortality rates than urban areas (Fontanella et al., 2015; United States Department of Agriculture [USDA], 2018; 2019; Cosby et al., 2019). In addition, rural areas experience disparities in access to behavioral health resources, healthcare providers, and community services (Andrilla et al., 2018; Jones et al., 2009). Rural young adults are transitioning to adulthood in the context of these growing disparities; however, their experiences

remain understudied. To move this body of research forward and acknowledge the heterogeneous factors in rural contexts, White et al. (2016) proposed contextually informed theorizing to integrate structural variables, process variables, and systemic heterogeneity in the study of human development. To identify ways that the transition to adulthood, rural context, and social and behavioral outcomes are integrated into the existing empirical literature about rural young adults, a scoping review was conducted and gaps in the literature were identified.

Transition to Adulthood

Research exploring the transition from adolescence to young adulthood has focused on the transition into adult roles generally encompassing five broad domains: work, education, romantic relationships, living independently, and family formation. This empirical research generally explores the timing of adult role transitions and the relationship to various behavioral health and social development outcomes, which may be unique in rural populations. For example, Maggs and colleagues (2012) identified four pathways among

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25–26-year-olds in a sample from the Monitoring the Future study largely defined by educational attainment, parenthood, marriage status, and living arrangements (e.g. with parents, independently, or with a partner). They found that earlier role transitions were related to decreased substance use, more economic independence, and life satisfaction in young adults; while young adults who completed a college degree, were employed fulltime, and without children, reported the highest levels of alcohol and drug use. Similar patterns have been found in research within rural communities. Carr and Kefalas (2011) identified five distinct pathways to adulthood in a sample of rural young adults from Iowa that encompassed the broader categories of Leavers, Returners, and Stayers. In their study, individuals were distinguished by educational pursuits, family formation, early work experience, and geographic relocation. Overall, the pathways identified in previous empirical studies included trajectories defined by higher education and family formation yet highlighted the heterogeneity of both transitions and outcomes experienced by young adults in nationally representative and rural contexts. Schulenberg and Schoon (2012) stressed the need for continuing to research the transition to adulthood using comparative research to gather more evidence for relationships between different role patterns and behavioral health outcomes. This research is necessary to clarify transitions and trajectories specific to rural populations where differing patterns of social roles and contextual factors may influence risk behaviors and mental health outcomes.

Life Course Theory

Several theoretical frameworks have been used to frame the research on the transition to adulthood. The most common theory to describe adult role transitions is life course theory, which describes transitions and trajectories as elements of “established pathways, their individual life courses, and developmental patterns” (Elder & Shanahan, 2007, p. 684). Transitions are embedded within trajectories, which give transitions specific form and meaning, and describe sequences of roles and expectations of those roles over an extended period. Trajectories then form pathways, sequences of social positions in and between organizations and institutions, that structure the direction of people’s lives. Of additional importance in life course theory is the focus on context, which is described as “the social embedding of individuals and typically entails study of biographical, historical, and ecological variations” (Elder et al., 2015, p. 6).

Bioecological Systems Model

Bronfenbrenner’s bioecological model emphasizes how context influences young adults’ social and behavioral transition to adulthood. Bronfenbrenner and Morris (2007) describe

the process, or the interactions between the organism and the environment, as the core of the bioecological model. Context is represented by four ecological systems: the microsystem, mesosystem, exosystem, and macrosystem. Although proximal processes are the most influential developmental process in contributing to developmental outcomes, the geographic and cultural context that one resides in cannot be unlinked from the proximal processes. Thus, the bioecological systems model is the appropriate theoretical framework for an analysis of how the rural context influences young adult social and behavioral development.

Emerging Adulthood

Arnett (2000) proposed emerging adulthood theory as a new developmental stage characterized by the delay of adult roles and responsibilities observed in western cultures. The five features of emerging adulthood proposed by Arnett (2007) are identity explorations, instability, self-focus, feeling in-between, and possibilities/optimism. However, critics of emerging adulthood theory point out that opportunities for young adults are shaped by structural constraints and access to resources which impacts entrance into adult roles (Côté, 2014; Hendry & Kloep, 2007), and that this lack of attention to context in emerging adulthood theory prevents it from being widely applicable to the examination of the transition to adulthood among rural young adults.

The Current Study

A scoping review was conducted to advance research on the social, behavioral, and contextual factors that influence role transitions, risk behaviors, and mental health outcomes during the transition to adulthood among adolescents and young adults in rural communities in the U.S. A scoping review is particularly useful for summarizing and disseminating research findings, identifying gaps, and providing recommendations for further inquiry when a body of literature is large, complex, and heterogeneous in nature. A scoping review was conducted to answer the following research questions: How do researchers define rural in their study samples and what theories guide their work? How do researchers integrate the rural context into the research design and method? And lastly, what variables, concepts, and outcomes are used to measure the rural experience?

Methods

The scoping methodology proposed by Arksey and O’Malley (2005) and further refined by Levac et al. (2010) and Peters et al. (2015) was used in the current study. Unlike systematic

reviews, a scoping review does not include a formal evaluation of the methodological quality and merits of studies and aims to provide an overview of the existing literature base (Levac et al., 2010; Peters et al., 2015). To facilitate the collection of the literature, a systematic process was used to minimize bias according to PRISMA guidelines for scoping reviews (Tricco et al., 2018) (see Fig. 1).

Search and Study Selection Process

Articles were identified through searches conducted in PsycINFO, Academic Search Premier, Web of Science, and Education Resources Information Center (ERIC). The first criterion for inclusion was at least one data point from the age range included in young adulthood. Young adults were defined as individuals between the ages of 18 and 29, to encompass the age range recommended by the National Research Council (2015) (18–26) and include the emerging adult literature, which generally indicates young adults have reached adulthood by age 30 (Arnett, 2000). A second criterion was that articles measure adult role achievement and/or behavioral health outcomes and report on these outcomes for young adults. The third criterion for inclusion was the

presence of a rural sample within the United States. Rural was not defined by the research team to ensure that integration and definitions of rural contexts could be analyzed. Articles were required to be published between 2009 and 2020 to address the growing disparities in rural contexts. Only English language publications were included. A full description of search terms and exclusion criteria are outlined in Table 1. The initial search and screening were completed in August 2019. An additional search was completed in November 2020 for empirical studies published since the initial search. The resulting list of 25 articles is described in Table 2 and represents research that examined a wide variety of factors and processes related to development during the transition to adulthood in rural contexts.

Data Extraction and Analysis

Per recommendations from Arksey and O'Malley (2005) and Peters et al. (2015), a standardized data extraction form was used to collect the following information from each empirical article: citation, theoretical framework, method, variables, measures, sample characteristics, ecological system of variables, results, and discussion. The primary authors

Fig. 1 Search process

Table 1 Search inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Sampling search terms	“young adult*” OR “early adult*” OR “emerging adult*” OR “18–29”	The study did not include young adults (age 18–29) in the analysis
Social behavioral development search terms	“transition to adulthood” OR “dev* trajet*” OR “role trajet*”	The study was not focused on the social and behavioral health outcomes of young adults
Contextual search terms	“rural”	The research design did not intentionally integrate rurality
Methods	Empirical research using quantitative or qualitative methods	Literature or critical reviews
Language	English	Published in language other than English
Publish date	2009–2020	Prior to 2009
Publication type	Peer-reviewed journal articles	Non-peer reviewed publications, dissertations, books, book chapters, government reports

and a team of three graduate and undergraduate students reviewed each article and completed the data extraction forms. Following guidance for rural contextual analysis from White et al. (2016), data extraction included the identification and organization of predictor and outcome variables by ecological system (Bronfenbrenner, 1979). This required the primary author and student research assistants to review the measured variables in each study and determine through consensus its contextual position within the ecological system (i.e., is it a microsystem, mesosystem, exosystem, or macrosystem variable?). The information from this phase of analysis was used to create a descriptive summary of the included studies and for later thematic contextual analysis (see Table 2).

Guided by the research questions, the analysis was undertaken by the two primary authors using an inductive approach. Levac et al. (2010) recommended that the data analysis phase of a scoping review follow a systematic coding process. Using a three-step process, the coders reviewed the data extraction forms, including the ecological system variable analysis, and identified relevant patterns within the data as initial codes. Once initial codes were identified and refined, they were organized into categories based on similarity and continuity of content. If needed, the original research studies were consulted for clarification of coding and categorization. While useful for organizing the codes, a third step was required to organize the categories into higher-order themes. Through discussion and consensus, the authors developed a three-tier coding system composed of themes, categories (or sub-themes), and codes, which are summarized in Table 3.

Results

Descriptive Summary of Studies

Twenty-five articles were identified from the search. Table 2 presents study characteristics including method, sample size, sample characteristics, geographic location, and a brief report of major findings from each study. Of the studies reviewed, 19 were quantitative and six were qualitative. All the quantitative studies were longitudinal in nature. Three studies collected data from as early as childhood (age 9) to predict functioning into young adulthood (ages 19–30); five studies analyzed data from early adolescence (ages 10–12) to predict outcomes in young adulthood (ages 21–30); five studies focused on the changes occurring between later adolescence (16–18) and young adulthood (ages 19–25); and six studies focused solely on change in the young adulthood period (ages 18–25). Qualitative studies represented the minority of the research literature and used a variety of approaches to examine rural young adult development. Qualitative approaches included life history narrative approach, coded interviews with focus groups, a phenomenological study with in-depth interviews, narrative inquiry, and a large-scale qualitative interview study.

Thematic Analysis

Five themes emerged from the review documenting the various ways researchers defined and integrated the rural context in their research and the variables, concepts, and outcomes they explored.

Theme 1: Clear Definitions of Rural were Based on Population, Proximity to Major Cities, and Economic Disadvantage

Half of the reviewed studies (52%) lacked a clear definition of the population size or community characteristics in their

Table 2 Summary of study articles

References	Method	n	Sample*	Geographic Location	Main Findings
Ansari et al. (2020)	Quantitative, longitudinal	684	Data: 5 to 22–23 years old 86% White, 8% Black, 6% other 46% males % Rural = N/A	AR, CA, KS, MA, PA, VA, NC, WA, WI	Absenteeism related to greater economic hardship and unemployment in young adulthood Rurality did not moderate this relationship
Barr et al. (2016)	Quantitative, longitudinal	324	Data: 21–23 years old 100% White 46% Male 100% Rural	Iowa	High-quality intimate relationships contributed to better health outcomes in young adulthood Rural sample had higher rates of marriage and limited transition between partners
Barton et al. (2018)	Quantitative, longitudinal	518	Data: 16–25 years old 100% Black 54% Female; 46% male 100% Rural	Georgia	Rural Black young adult perpetuation pattern of substance use Risk factors of deviant peer affiliation and stress/racial discrimination influenced patterns
Beal et al. (2016)	Quantitative, longitudinal	626	Data: 16–23 years old Majority white 52% Male 100% Rural	Eastern U.S	Rural adolescents who expected earlier adult role entry more likely to be girls and parents had lower education Expected transitions tended to hold true in young adulthood
Berg et al. (2018)	Quantitative, longitudinal	2967	Data: 18–25 years old 64.9% White, 22.6% Black, 6.6% Asian, 7.8% Hispanic, 5.9% Other 64.5% Female, 35.5% Male 58.4% Rural	Georgia	No support for increased smoking prevalence among rural young adults College onset and later onset smokers both more likely to be male and to attend technical college
Berg et al. (2020)	Quantitative, longitudinal	2952	Data: 18–28 years old 65% White, 7.8% Hispanic 64.5% Female, 35.5% Male 58.4% Rural	Georgia	Adult tobacco users more likely to attend public or technical college and live in a rural setting Earlier marijuana use predicted being Adult, College, and Teenage tobacco users
Berry and Hirschl (2017)	Quantitative, longitudinal	18,000	Data: 12–16 & 25–30 years old 88.3% White, 11.7% Non-White 21.4% Rural	U.S	Rural residence was not a strong predictor of poverty in young adulthood Single families with children, service sector occupations, low parental income, and parental education below high school strongest predictors of poverty in young adulthood
Carrillo (2016)	Qualitative, cross-sectional	3	100% Latinx 100% Male 100% Rural	North Carolina	Lack of racial and ethnic diversity in rural areas made it difficult for Latinx men to find sense of belonging and feelings of “home” in rural south

Table 2 (continued)

References	Method	<i>n</i>	Sample*	Geographic Location	Main Findings
Copeland et al. (2017)	Quantitative, longitudinal	1420	Data: 9–16 & 19–30 years old 67% White, 25% Native American 6.9% Black, less than 1% Hispanic 49% Female 100% Rural	North Carolina	Children experiencing suicidal thoughts and behaviors had less successful transitions to adulthood than children with only suicidal ideation Childhood suicidal ideation and attempts predicted increased risk of adult suicidal behavior
Copeland et al. (2015)	Quantitative, longitudinal	1420	Data: 9–16 & 19–30 years old 67% White, 25% Native American 6.9% Black, less than 1% Hispanic 49% Female 100% Rural	North Carolina	Children experiencing psychiatric diagnoses and symptoms experienced poor adult outcomes Children diagnosed with psychiatric disorder more likely to be male, Native American, and experience all types of family adversity
Crockett and Beal (2012)	Quantitative, longitudinal	411	Data: Grades 9–12 & 21–26 years Majority White 100% Rural	Eastern U.S	Adolescents with egalitarian gender roles planned for extended education, later ages for marriage, and later ages for parenthood Anticipating earlier ages of parenting was associated with increased likelihood of children in young adulthood
Greene et al. (2018)	Qualitative, cross-sectional	72	Age Range: 18–25 years 92% non-Hispanic White 51% female; 49% male 100% Rural	Montana	Aspects of the rural context, social pressure and modeling, cultural values, legal environment, and sparse population, shaped attitudes and beliefs about drinking and driving Rural young adults described drunk driving as “cultural”, persisting across generations, and tied to the rural context
Kefalas et al. (2011)	Qualitative, cross-sectional	424	Age Range: 21–38 years 98% White** Majority Female 24.6% of entire sample Rural	California, Iowa, Minnesota, New York	Marriage naturalists transitioned to adulthood earlier in life course and achieved markers of adulthood in sequence and were mainly from Iowa Rural social context and living in/returning to rural area led to marriage being next “natural step” in long-term relationship
Kogan et al. (2017)	Quantitative, longitudinal	505	Age range: 19–22 years 100% Black 100% Male 100% Rural	Georgia	Substance use predicted increased depressive symptoms over time Relationship was only evinced when young adult, rural Black males experienced childhood adversity

Table 2 (continued)

References	Method	<i>n</i>	Sample*	Geographic Location	Main Findings
Liu et al. (2020)	Quantitative, longitudinal	225	Age range: 18–25 years old 59.6% White, 30.7% Black, 5.8% Hispanic/Latino, 4.0% others 46.7% Male, 52.9% Female, 0.4% transgender 100% Rural	Southeastern U.S	Depressive symptoms mediated the relationship between childhood maltreatment and alcohol use problems in young adulthood Biomarker of self-regulation (high HR-V) buffered this relationship protecting young adults from self-medicated alcohol use
Mason et al. (2009)	Quantitative, longitudinal	429	Data: 11–22 years old Over 95% White 52% female; 48% male 100% Rural	Iowa	Rural young women who participated in the Preparing for the Drug Free Years program reported lower rates of alcohol abuse in young adulthood compared to control group Prosocial skills mediated this relationship in intervention group indicating this may be mechanism for intervention effects
Murry et al. (2014)	Quantitative, longitudinal	378	Data: 10–21 years old 100% Black 100% Male 100% Rural	Georgia & Iowa	Involved-vigilant parenting, adaptive racial socialization, and positive peer influence promoted positive development in rural Black males The positive development reduced likelihood of Black males engaging in HIV-related risk behaviors in young adulthood
Murry et al. (2013)	Quantitative, longitudinal	411	Data: 12–21 years old 91% Black, 9% ethnically mixed 100% Male 100% Rural	Georgia & Iowa	Harsh, inconsistent parenting in presence of family and economic stress and poor maternal psychological functioning was related to youth's increased susceptibility to risk and substance using peers This was then related to increased levels of risky sexual behavior and substance use in young adulthood increasing vulnerability for HIV
Olson (2016)	Qualitative, cross-sectional	6	Data: graduated with Bachelor's degree before age 26 100% White 66.6% Female 100% Rural	Midwest	Rural young adults, who were FGCs and graduated, were reworking family dynamics as they pursued careers very different from family of origin Navigating culture of origin and culture of aspiration in following passions and career goals

Table 2 (continued)

References	Method	<i>n</i>	Sample*	Geographic Location	Main Findings
Pachankis et al. (2020)	Quantitative, longitudinal	108	Data: 18–29 years old 87.1% White 55.6% identified as women, 24.1% transgender or gender nonconforming 100% Rural	Northeast Tennessee	LGBTQ rural young adults experienced significant reductions in depression with an expressive writing and self-affirmation intervention when experiencing high levels of discrimination LGBTQ rural young adults experienced significantly greater decrease in suicidal ideation when experiencing high levels of discrimination when compared to control groups
San Antonio and Kaplan-Bucciarelli (2020)	Qualitative, cross-sectional	10	Age range: 19.5–24 years old 100% White 50% Male, 50% Female 100% Rural	Northeast U.S	Rural young adults experiencing family instability, disconnection from peers, neighborhood transition, no high school diploma, and mental health problems experienced difficulties in early work experiences Social support and proactive personality served protective functions and helped young adults envision vocational paths and meaningful contributions through labor
Schmitt-Wilson et al. (2019)	Qualitative, cross-sectional	9	Age range: 25–29 years old 100% White 78% Female, 22% Male 100% Rural	Montana	Increased social support and connection was cited as a positive reason to live in rural communities by young adults who moved to rural areas The natural environment and unstructured free time allowed rural young adults to pursue meaningful activities and interests
Sharp et al. (2020)	Quantitative, longitudinal	517	Data: 16–20 years old 92% White 53% female T1,T2 61% female T3 100% Rural	New England	Rural adolescents with high expectations and aspirations for education and careers were more likely to be in school full-time in young adulthood compared with those with low college aspirations and expectations and those with low college and career expectations and aspirations Rural adolescents with the lowest future aspirations and expectations reported significantly lower grades, school belonging, and community attachment earlier in high school

Table 2 (continued)

References	Method	<i>n</i>	Sample*	Geographic Location	Main Findings
Temmen and Crockett (2020)	Quantitative, longitudinal	442	Data: Grade 12 & 21–26 years old 96% White 55.7% Female 100% Rural	Eastern U.S	Positive relationships between coping and social motives and binge drinking were stronger in rural men than women Occupational stress was indirectly related to alcohol misuse, through social and coping motives, for men and relationship stress was indirectly related to alcohol use, through social motives, for women
Warner (2016)	Quantitative, longitudinal	18,697	Data: 12–34 years old 54% White, 24% Black, 16% Hispanic, 7% Asian, 2% Native American 51% Female % Rural = N/A	U.S	Youth from predominantly White neighborhoods both initiated use and desisted from marijuana use more quickly than peers of color in other types of neighborhoods There was a protective rural effect for youth from low-income Black rural neighborhoods who had lower marijuana use than youth from predominantly White neighborhoods

*Sample ages for longitudinal studies are reported as “Data: with the age range data was collected and analyzed from. Sample ages for qualitative studies are reported as age ranges of participants

**Sample characteristics for Iowa reported in table. For full sample characteristics see Kefalas et al. (2011)

Table 3 Thematic analysis of empirical articles (N = 25)

Theme	Sub-theme	Codes	Frequency of codes	Citations
Clear definitions of rural were based on population, proximity to major cities, and economic disadvantage	Population-based	Metro & non-metro	5	Ansari et al. (2020); Berry and Hirschl (2017); Greene et al. (2018); Liu et al. (2020); Warner (2016)
		Other population marker	3	Mason et al. (2009); Crockett and Beal (2012); Schmitt-Wilson et al. (2019)
		Distance from major city (defined)	1	Crockett and Beal (2012)
		Distance from major city (undefined)	2	Carillo (2016); Schmitt-Wilson et al. (2019)
	Proximity-based	High poverty rates	4	Barton et al. (2018); Copeland et al. (2015, 2017); Kogan et al. (2017)
		Economically depressed	3	Beal et al. (2016); San Antonio and Kaplan-Bucciarelli (2020); Sharp et al. (2020)
	Economically disadvantaged	High-stigma, low-resource	1	Pachankis et al. (2020)
		"small or midsized towns"	4	Murry et al. (2013, 2014); Carillo (2016); Olson (2016)
	High-stigma, low-resource Author descriptive	No clear definition	13	Beal et al. (2016); Kefalas et al. (2011); Murry et al. (2013, 2014); Copeland et al. (2015, 2017); Barr et al. (2016); Olson (2016); Kogan et al. (2017); Barton et al. (2018); Berg et al. (2018, 2020); Temmen and Crockett (2020)
		Lacked a clear description of population size or community characteristics	3	Kefalas et al. (2011); Crockett and Beal (2012); Schmitt-Wilson et al. (2019)
Most studies were atheoretical when describing the transition to adulthood	Theory driven	Life course theory (Elder et al., 2003)	3	Copeland et al. (2015); Olson (2016); Temmen and Crockett (2020)
		Developmental transition	3	San Antonio and Kaplan-Bucciarelli (2020)
		Emerging adulthood theory Arnett (2000)	1	Barr et al. (2016); Berry and Hirschl (2017)
		Extended transition	2	Beal et al. (2016); Murry et al. (2013, 2014); Berry and Hirschl (2017); Pachankis et al. (2020); Sharp et al. (2020); Berg et al. (2020)
	Atheoretical	Life course approach	7	Carillo (2016); Warner (2016); Berg et al. (2018); Ansari et al. (2020)
		Time of many changes	4	Copeland et al. (2017)
		Functioning in adult roles	1	Barton et al. (2018); Greene et al. (2018); Kogan et al. (2017); Liu et al. (2020); Mason et al. (2009); Pachankis et al. (2020)
		Increased risk	6	

Table 3 (continued)

Theme	Sub-theme	Codes	Frequency of codes	Citations
Behavioral health and social development outcomes primarily focused on adult social roles, substance use, and mental health	Physical health	Physical Health	3	Barr et al. (2016); Copeland et al. (2015, 2017)
		Depression	3	Barr et al. (2016); Kogan et al. (2017); Pachankis et al. (2020)
	Mental health	Suicidality	3	Copeland et al. (2015, 2017); Pachankis et al. (2020)
		Psychiatric diagnosis	2	Copeland et al. (2015, 2017)
	Substance use	Anxiety	1	Pachankis et al. (2020)
		Psychological distress	1	Pachankis et al. (2020)
		Alcohol	8	Barton et al. (2018); Copeland et al. (2017); Liu et al. (2020); Mason et al. (2009); Murry et al. (2013, 2014); Pachankis et al. (2020); Temmen and Crockett (2020)
		Marijuana	2	Barton et al. (2018); Warner (2016)
		Illegal drug use	5	Copeland et al. (2015, 2017); Murry et al. (2013, 2014); Pachankis et al. (2020)
		Tobacco	3	Berg et al. (2018, 2020); Murry et al. (2013)
	Risk behaviors	Sexual risk taking	4	Copeland et al. (2017); Murry et al. (2013, 2014); Pachankis et al. (2020)
		Drinking and driving	1	Greene et al. (2018)
	Adult social roles	General risky and deviant behavior	1	Ansari et al. (2020)
		Contact with legal system	3	Ansari et al. (2020); Copeland et al. (2015, 2017)
		Work	7	Beal et al. (2016); Crockett and Beal (2012); Olson et al. (2020); Schmitt-Wilson et al. (2019); Ansari et al. (2020); San Antonio and Kaplan-Bucciarelli (2020); Sharp et al. (2020)
		Marriage & romantic relationships	5	Beal et al. (2016); Kefalas et al. (2011); Crockett and Beal (2012); Copeland et al. (2015, 2017)
	Financial	Parenthood	5	Crockett and Beal (2012); Beal et al. (2016); Copeland et al. (2015, 2017); Ansari et al. (2020)
		Education	5	Beal et al. (2016); Crockett and Beal (2012); Copeland et al. (2015); Sharp et al. (2020); Ansari et al. (2020)
	Financial	Living independently	3	Beal et al. (2016); Schmitt-Wilson et al. (2019); Sharp et al. (2020)
		Poor financial functioning	2	Copeland et al. (2015, 2017)
		Poverty & economic hardship	4	Ansari et al. (2020); Berry and Hirschl (2017); Copeland et al. (2017); San Antonio and Kaplan-Bucciarelli (2020)

Table 3 (continued)

Theme	Sub-theme	Codes	Frequency of codes	Citations
The rural context was integrated into the research design, method, and discussion at varying degrees	Community engagement Identity	Political participation	1	(Ansari et al., 2020)
		Identity development	1	Carrillo (2016)
		Variables & Concepts, Sample, RQs & Hypotheses	6	Warner (2016); Berry and Hirschl (2017); Greene et al. (2018); Schmitt-Wilson et al. (2019); Pachankis et al. (2020); San Antonio and Kaplan-Bucciarelli (2020)
	Partial Design Integration	Sample, RQs & Hypotheses	3	Murry et al., (2013, 2014); Sharp et al., (2020)
		Variables, Sample	1	Kefalas et al. (2011)
	Narrow Design Integration	Variables, RQs & Hypotheses	3	Ansari et al. (2020); Berg et al. (2018, 2020)
		Sample	11	Mason et al. (2009); Beal et al. (2016); Crockett and Beal (2012); Copeland et al. (2015, 2017); Barr et al. (2016); Olson (2016); Barton et al. (2018); Kogan et al. (2017); Liu et al., (2020); Temmen and Crockett (2020)
		RQs & Hypotheses	1	Carrillo (2016)
	Integrated in Discussion & implications	Research & theoretical implications	6	Berry and Hirschl (2017); Greene et al. (2018); Kefalas et al. (2011); Murry et al. (2014); Sharp et al. (2020); Warner (2016)
		Policy implications	10	Warner (2016); Berry and Hirschl (2017); Greene et al. (2018); Murry et al. (2013, 2014); Pachankis et al. (2020); Schmitt-Wilson et al. (2019); Sharp et al. (2020); Ansari et al. (2020); San Antonio and Kaplan-Bucciarelli (2020)
Limited Integration in Discussion & Limitations	Study-specific rural context	Study-specific rural context	10	Beal et al. (2016); Kefalas et al. (2011); Crockett and Beal (2012); Carrillo (2016); Warner (2016); Greene et al. (2018); Schmitt-Wilson et al. (2019); Pachankis et al. (2020); Sharp et al. (2020)
		Comparisons with other rural populations & studies	5	Beal et al. (2016); Murry et al. (2013); Berry and Hirschl (2017); Schmitt-Wilson et al. (2019); Sharp et al. (2020)
		Generalizability	6	Barr et al. (2016); Kogan et al. (2017); Liu et al. (2020); Mason et al. (2009); Olson (2016); Temmen and Crockett (2020)
	Brief mention of rural in discussion & implications (2 sentences or less)	Brief mention of rural in discussion & implications (2 sentences or less)	5	Barton et al. (2018); Berg et al. (2018, 2020); Olson (2016); Temmen and Crockett (2020)

Table 3 (continued)

Theme	Sub-theme	Codes	Frequency of codes	Citations
Researchers measured variables and concepts unique to the rural experience primarily in the contextual domains of the individual, the microsystem, the exosystem, and the macrosystem	Lacking Integration in Discussion & Limitations	No mention of rural outside of sample	2	Copeland et al. (2015, 2017)
		Attitude and normative beliefs, trial behaviors and experiences (P)	1	Greene et al. (2018)
	Individual	Work & residential aspirations (P)	5	Kefalas et al. (2011); Crockett and Beal (2012); Schmitt-Wilson et al. (2019); San Antonio and Kaplan-Bucciarelli (2020); Sharp et al. (2020)
		Community attachment (P)	1	Sharp et al. (2020)
	Microsystem	ACEs & child-maltreatment (P)	4	Berg et al. (2018, 2020); Kogan et al. (2017); Liu et al. (2020)
		Lack of representation in teachers (P)	1	Carrillo (2016)
	Exosystem	Adaptive racial socialization (P)	1	Murry et al. (2014)
		social risk & protective factors (P)	1	Greene et al. (2018)
		Proximity to nature (S)	1	Schmitt-Wilson et al. (2019)
		Neighborhood characteristics (S)	1	Warner (2016)
		Legal environment (S)	1	Greene et al. (2018)
		Physical environment (S)	1	Greene et al. (2018)
	Macrosystem	Rural & urban community setting (S)	6	Kefalas et al. (2011); Warner (2016); Berry and Hirschl (2017); Berg et al. (2018, 2020); Ansari et al. (2020)
		Discrimination & victimization (P)	3	Carillo (2016); Barton et al. (2018); Pachankis et al. (2020)
		Marginalization (S)	1	San Antonio and Kaplan-Bucciarelli (2020)
		Culture (S)	3	Greene et al. (2018); Kefalas et al. (2011); Olson (2016)
		Economy (S)	2	Kefalas et al. (2011); San Antonio and Kaplan-Bucciarelli (2020)
		Low SES (S)	4	Beal et al. (2016); Warner (2016); Berry and Hirschl (2017); Berg et al. (2018)

In the fifth theme, (P) represents process variables and (S) represents structural variables identified using White et al.'s (2016) contextual heterogeneity approach to contextually informed theorizing

rural sample (see Table 3). These studies generally cited their sample as “rural” without further discussion or definition of what they specifically meant by “rural”. Studies used population indicators, such as metro and non-metro county-level classification (U.S. Census Bureau, 2020) ($n=5$), while others mentioned another population marker: primary town size of 3500 people (Crockett & Beal, 2012), communities ranging from 900 to 9700 people in a Frontier Area (Schmitt-Wilson et al., 2019) and populations less than 8500 people (Mason et al., 2009). Two studies cited proximity to major cities or towns (Crockett & Beal, 2012; Carrillo, 2016), both with a clear definition of the distance (e.g. 3 h from the nearest major city and 45 min from nearest urbanized area; Crockett & Beal, 2012) and vague (e.g. small town outside of larger metropolitan area; Carrillo, 2016). When describing their rural sample, several studies documented high poverty rates ($n=5$) or described the area as “economically depressed” ($n=3$). One study described the rural area as “high-stigma, low-resource” (Pachankis et al., 2020). Kogan et al. (2017) described their rural environment as “resource poor” with a concentration of poverty that corresponds with the worst economic and health disparities by race in the U.S. Several authors also described the rural sample as hailing from “small or mid-sized towns” ($n=4$).

In addition, the geographical representation of rural communities in the U.S. was limited. The majority of studies used rural samples from Georgia ($n=6$) and Iowa ($n=5$) (see Table 2). Three studies used samples from rural North Carolina, three studies from rural areas in the Eastern U.S., two studies from rural areas in the Northeastern U.S./New England, one study from the rural Midwest, two studies from rural Montana, one study from rural areas in the Southeastern U.S., and one from Northeastern Tennessee. Only two of the 25 studies used nationally representative samples in their research.

Authors did not justify a lack of rural definition; however, the general mention of region and categorizing the sample as rural may have been an attempt to protect participant identities. If researchers were too specific about town size within a geographic region, there could be risk of participants being identified, especially in very small communities. Additional contextual details could also be limited due to page limits and focus of the journal’s articles were published in. Studies that were coded as limited or lacking rural integration (see Theme 5) tended to be vague in their definition of rural. For example, Copeland et al. (2015) did not mention the rural context in their study, except in the sample description, and did not include a clear definition of rural. However, Greene and colleagues (2018) integrated the rural context at every step in their research design and included a rich description of the rural context of their empirical study. If a researcher appeared interested in uniquely rural phenomenon

or focused deliberately on a rural problem, there appeared to be more detail about the rural context.

Theme 2: Most Studies were Atheoretical When Describing the Transition to Adulthood

Of the 25 studies reviewed, seven (28%) cited and described theory during their discussion of the transition to adulthood. Three studies integrated concepts from life course theory into their descriptions of the transitional phase of young adulthood, characterized by changing social roles and expectations within the current historical and social context (Elder & Shanahan, 2007). One study framed their investigations using emerging adulthood theory (Arnett, 2000). Three studies used a developmental transition lens that cited specific developmental tasks that young adults accomplish before transitioning to adulthood, such as developing identity, decision making skills, completing an education, and getting and maintaining a job (Roisman et al., 2004; Settersten & Ray, 2010). Of these seven studies, six were focused on social development outcomes (e.g. timing of adult social role achievement, timing and views of marriage, work outcomes, living independently in rural communities). It appears that social development outcomes may lend themselves more readily to a specific theory, especially life course theory, as there are clearer theoretical linkages.

Most studies (72%) were atheoretical when describing the transition to adulthood, although they may have included discussions of other theories that guided their work. This may be due to the general goals of behavioral health research to identify risk and protective factors to prevent substance use and mental health problems in young adults. These studies described an extended transition, time of many changes, need to function in adult roles, and a time of increased risk in introductions to their research questions and objectives. Seven studies situated the developmental transition within the life course but did not specifically cite or use life course theory as a guiding framework.

While most studies were atheoretical, all 25 of the studies highlighted why it is important to study the transition to adulthood, as it is a sensitive period during the life course. Berg et al. (2020) described young adulthood as a “pivotal developmental period”. One article asserted that “a successful transition to adulthood involves a bevy of developmental challenges” (Copeland et al., 2015, p. 893). Many articles also highlighted the elongated transition to adulthood and the need to understand how this is impacting both behavioral health outcomes and social role transitions. Contextual factors including the global restructuring of the economy, increase in educational expectations, and geography were highlighted as contributing to the elongated transition and constraining developmental opportunities for young adults. However, in the behavioral health literature these contextual

factors were not consistently identified as being salient to the development of substance use disorders or the mental health of rural young adults. Researchers included more contextual factors in their discussion of the transition to adulthood in the social development literature. For example, Kefalas et al. (2011) described how geography plays a role in the social and personal expectations for transitions into adult social roles within the life course. Berry and Hirschl (2017) described how delays in the timing of first marriage, rise in single parent households, and global restructuring of the economy contribute to an increased risk of poverty for young adults during this transition. Akin to life course theory, context has an important role in providing and constraining opportunities for young adult development.

Theme 3: Behavioral Health and Social Development Outcomes Primarily Focused on Adult Social Roles, Substance Use, and Mental Health

An additional focus of this scoping review was on the behavioral health and social development outcomes of rural young adults in the transition to adulthood. Behavioral health outcomes were divided into four categories, substance use ($n=18$), which was identified separately due to the number of studies that examined substance use, and physical health ($n=3$), mental health ($n=10$), and risk behaviors ($n=9$). Social development outcomes were organized to represent the five broad domains of adult social roles including: work ($n=7$), marriage and romantic relationships ($n=5$), parenthood ($n=5$), education ($n=5$), and living independently ($n=3$). Additionally, poor financial functioning ($n=2$), poverty or economic hardship ($n=4$), community engagement ($n=1$), and identity development ($n=1$) were included under the umbrella of social development outcomes.

Behavioral Health and Social Development Outcomes Only three studies assessed both behavioral health and social development outcomes. Copeland et al. (2015, 2017) assessed a wide variety of indicators of young adult functioning including contact with the legal system, suicidality, illegal drug use, financial functioning, marriage/romantic relationships, and parenthood, among other outcomes. Similarly, Ansari et al. (2020) assessed risk behavior and contact with the legal system in addition to parenthood, education, and poverty or economic hardship. Each study broadly focused on functioning in young adulthood and identified markers for poor functioning and early role transitions. Of note, early role transitions are not harmful in and of themselves. Early role transitions may have a protective effect for certain risk behaviors (e.g. heavy drinking, drug use, marijuana use), but a risk factor for other risk behaviors (e.g. cigarette smoking, opioid use) (Maggs et al., 2012; Green et al., 2017; San Antonio & Kaplan-Bucciarelli, 2020). The

unique combinations of adult social roles and the ages they are assumed appeared to be important factors for risk and protective effects.

Behavioral Health Outcomes Only Behavioral health outcomes are necessary to study during the transition to adulthood as substance use, risk behaviors, and mental health concerns peak around this time (Schulenberg & Zarrett, 2006). Further, there is a disparity in access to mental health services to improve behavioral health outcomes in rural populations (Ziller & Coburn, 2018). Liu et al. (2020) specifically highlighted the rationale for studying alcohol use problems in a rural sample was to inform prevention and intervention programs targeting rural young adults. Similarly, Murry and colleagues (2013; 2014) described the need to apply findings to address HIV/AIDS disparities among African American males in the rural south. These researchers appeared to be motivated to address health disparities in rural populations.

Social Development Outcomes Only Due to the transitional nature of young adulthood, social development outcomes tended to focus broadly on transitions to adult social roles. Longitudinal quantitative studies examined how future aspirations and expectations in adolescence were related to actual adult social role transitions, educational and work attainment, and residential aspirations in young adulthood (Beal et al., 2016; Sharp et al., 2020; Crockett & Beal, 2012;). Four of the six qualitative studies conducted inquiries into social role transitions including the meaning of marriage for rural young people (Kefalas et al., 2011), work (Olson, 2016; San Antonio & Kaplan-Bucciarelli, 2020; Schmitt-Wilson et al., 2019), and living independently in rural communities (Schmitt-Wilson et al., 2019). The intersection of rural and social class appeared to constrain work and educational opportunities (San Antonio & Kaplan-Bucciarelli, 2020; Sharp et al., 2020) while the rural context appeared to promote an earlier transition to marriage in young adulthood (Kefalas et al., 2011). Notably, only one article focused on identity development in young rural Latinx males in the context of the transition to adulthood (Carrillo, 2016), a time when personal, racial, gender, and other identities are more fully explored (Arnett, 2007).

Theme 4: The Rural Context was Integrated into The Research Design, Method, and Discussion at varying Degrees

Empirical articles were evaluated based on how well the authors integrated the rural context into the design, method, and discussion in each report (see Table 3). Sub-themes were organized into two categories, those related to design and method and those related to discussion and implications.

Three sub-themes emerged for design and method and were defined by the level of integration in three areas: (a) studies that integrated predictor variables, concepts, covariates, and moderators that were uniquely rural or a rural variable; (b) studies that described sample selection that included the rationale for selecting the rural sample; and (c) studies that proposed research questions and hypotheses that included the rural context.

Full Design Integration Six studies achieved *full design integration* and specifically used rural location as a predictor for investigating behavioral health and social development outcomes. For example, the aim of a study of rural young adults' entry into poverty was to "examine whether young adults in rural areas face a heightened risk of entry into poverty" (Berry & Hirschl, 2017, p.77) and evaluated if the residential "rural effect" persisted after controlling for contextual, family background, and individual level risk factors for poverty (c: questions). They included rural as a predictor for entering poverty in young adulthood (a: variables) and described how they identified their rural sample using Census metro and non-metro designations (b: sample).

Partial Design Integration Seven studies were identified as having *partial design integration* and included two of the three coding criteria (see Table 3). Most of the studies in this sub-theme either integrated rural within sample selection and research questions and hypotheses (b and c), or predictor variables and research questions and hypotheses (a and c). Only one study, Kefalas et al. (2011) integrated rural within concepts and sample selection (a and b). Kefalas and colleagues (2011) were interested in the meaning of marriage for young adults and sampled from rural Iowa to represent rural young people and included rural in their conceptualization of marriage naturalists, who tended to follow 1950s patterns of marriage and family formation. Several studies (n=8) with partial integration noted poverty or areas in economic decline as a reason for selecting a rural sample. Poverty rates were higher in nonmetro areas when compared to metro areas in every year since 1959 (USDA, 2020). Behavioral health and social development outcomes are linked to socioeconomic status, so it is no surprise that rural samples are selected to study this linkage (National Center for Education Statistics, 2002; Newacheck et al., 2003; Osgood et al., 2005).

Narrow Design Integration *Narrow design integration* studies included only one of the criteria, most often either sample selection (b) or research questions and hypotheses (c). Eleven studies (44%) cited rural in sample selection but did not integrate this rural context into their variables/concepts of investigation or include rural in their research questions or hypotheses. For example, Barr et al. (2016) selected a

rural sample to replicate a study testing their model describing how relationship instability is associated with changes in mental and physical health; however, none of the predictor variables or research questions specifically addressed rural contexts. Uniquely, Carrillo (2016) integrated rural into the research question for the narrative life history inquiry of Latinx young men but did not include it as a concept or cite it in sample selection.

Research and Theoretical Implications The integration of rural in the discussion and implications sections of the articles was evidenced in the following ways: research and theoretical implications, policy implications, using the rural context of the study to provide potential explanations for results, and comparisons with other rural populations and/or studies. Research and theoretical implications (n=6) included supporting theories of rural poverty (Berry & Hirschl, 2017); an explanatory model of reasons for and against drinking and driving (Greene et al., 2018); geography and cultural contexts (rural) that shape orientations towards marriage for young adults (Kefalas et al., 2011); strength-based, resilience models that foster positive development among rural youth (Murry et al., 2014); different socialization processes for rural male and female adolescents that influence future aspirations and contributes to the rural brain drain (Sharp et al., 2020); and conceptualizing neighborhood risk of problem behaviors using the dimensions of race/ethnicity, class, and geography (rural) (Warner, 2016). The authors of these empirical studies discussed their findings in relation to the contributions to theories and models or providing support for further research pathways into contextual influences of behavioral health and social development outcomes.

Policy Implications Articles that cited specific policy implications (n=10) ranged from macro-level changes in occupational opportunities for rural young adults to the need to consider geography in intervention and prevention programs. Prevention and intervention were the focus of many studies exploring behavioral health (n=6). Ansari et al. (2020) recommended reducing absenteeism in both rural and urban schools to prevent poor outcomes in young adulthood. Pachankis et al. (2020) described the potential for a highly impactful and cost-effective brief, portable intervention that could be disseminated broadly to sexual minority young adults living in high-stigma, low-resource areas. Murry and colleagues (2013, 2014) described how their research into risk and protective factors should be used in HIV prevention programs to address the HIV/AIDS epidemic among Black communities in the rural South. Warner (2016) called for more place-based prevention programs targeting risk behaviors in adolescents. Greene et al. (2018) recommended the risk and protective factors identified in their study be used to inform prevention programming and increase DUI enforce-

ment to reduce drinking and driving behaviors. Several studies ($n=4$) highlighted a need to connect rural young people to careers and/or economic opportunities such as aligning secondary education to trades (Sharp et al., 2020), provide occupational opportunities at a reputable salary and advertising these through online channels (Schmidt-Wilson et al., 2019), opportunities for career exploration (e.g., Makerspaces) (San Antonio & Kaplan-Bucciarelli, 2020), and investing in local community colleges to provide educational programs to young adults from disadvantaged backgrounds (Berry & Hirschl, 2017). The remaining studies ($n=9$) described implications for research, theory, and policy more broadly.

Study-Specific Rural Contextual Explanations Fifteen studies used the specific rural context to explain results and/or compare their findings with other studies of rural young adults. The heterogeneous nature of rural communities supports the idea that the rural-specific context may indeed influence the results of empirical studies. The economic disadvantage, loss of economic opportunities specific to that geographic location, or agrarian economy and lifestyle were described as possible contributors in six studies (Beal et al., 2016; Crockett & Beal, 2012; Kefalas et al., 2011; Schmitt-Wilson et al., 2019; San Antonio & Kaplan Bucciarelli, 2020; Sharp et al., 2020). Two studies highlighted the structural challenges of residing in rural communities such as disparities in mental health providers and racial or sexual identity discrimination (Carrillo, 2016; Pachankis et al., 2020). Greene et al. (2018) described the rural culture that promotes drinking and driving among young adults and Warner (2016) described a rural protective effect for low-income, Black youth who appeared to have lower marijuana use trajectories than their white peers.

Comparisons with Other Rural Populations/Studies Five articles integrated comparisons to other rural young adult populations and studies into their discussion and implications sections. Beal et al. (2016) highlighted similarities between their sample in educational attainment, labor force participation, age of marriage, and age at parenthood and population trends for rural young people based on 1990 U.S. Census data. Murry et al. (2013) noted that their findings were consistent with previous studies of African American families living in the rural Southern U.S.

Limited Integration of Rural Eleven studies were coded as having “limited integration of rural”. Six studies mentioned rural in their limitations section to caution against generalizing findings to urban samples. Five studies briefly (less than 2 sentences) mentioned the rural context in their discussion and implications section. For example, Berg and colleagues (2020) explained their finding that adult users

of tobacco products were more likely to reside in rural settings due to fewer smoke-free policies and greater smoking prevalence in rural areas, structural factors that influence long-term tobacco use. In these limited integration articles, rural contexts did not appear to be central to the interpretation of findings. Temmen and Crockett (2020) cited their use of a mostly white, rural community sample as a possible explanation for the mediating effect of social motives in the linkage between normative stress and alcohol misuse during the transition to adulthood. Researchers appeared to be more focused on drawing conclusions for the effectiveness of interventions, applicability of a theory, risk and protective factors, risk trajectories, and the transition to work.

Lacking Integration of Rural Two studies lacked rural integration and mentioned rural only in reference to the sample. Copeland and colleagues (2015; 2017) used the term “rural” only in the description of their sample. There was brief mention that the area sampled from experienced poverty and economic decline; however, it was not integrated further into the discussion or conclusions. These two studies were focused on psychopathology and adult outcomes, which may explain the lack of rural integration.

The rural context appeared to be deeply ingrained in the conceptualization and discussion of the empirical research in some articles and was treated as an afterthought in others. Varying degrees of integration in the research design and in the discussion and implications of the findings were evaluated. Overall, seven studies met the *narrow design integration* criteria and only two studies were lacking integration in the discussion and limitations section supporting that researchers are focusing on questions, variables, samples, and implications that are important for furthering the understanding of rural young adult development.

Theme 5: Researchers Measured Variables and Concepts Unique to the Rural Experience Primarily in the Contextual Domains of the Individual, the Microsystem, the Exosystem, and the Macrosystem

The analysis showed that the variables that were included to measure the rural environment (e.g., rural attitudes and beliefs, community attachment, etc.) were assessed at various ecological levels. Using Bronfenbrenner’s (1979) ecological systems as a framework, variables were coded as representing the individual, microsystem, exosystem, and macrosystem (see Table 3). In addition, there was significant heterogeneity in the measurement of rural variables as well as the impact of the rural environment on outcomes of both quantitative and qualitative analysis. To organize these diverse characteristics, an adaptation of White et al.’s (2016) contextual heterogeneity approach to contextually informed theorizing was used. Variables were coded in three domains:

structural variables, process variables, and systemic heterogeneity. First, variables were coded for systemic heterogeneity, which is identifying “where in the nested ecological system a relevant contextual variable belongs” (White et al., 2016, p. 282). Then, variables were coded to represent either a rural structural variable or a rural process variable. Structural variables are described as a context’s key structural characteristics such as demographic, environmental, and institutional resources that are heterogeneous within rural communities (White et al., 2016). These structural variables appear to primarily be represented in the selected studies within the macrosystem and exosystem. Process variables are described as an extension of Bronfenbrenner and Morris’s (2007) proximal processes and evaluate the processes and interactions with other people, objects, and symbols in the developing person’s environment (White et al., 2016). Process variables that appear to be unique to rural contexts included the individual level variables of community attachment, attitudes and normative beliefs, and work and residential aspirations.

Macrosystem Level The macrosystemic level was primarily characterized by structural variables like rural community setting, culture, economic realities and poverty, and marginalization but also included processes variables such as discrimination and victimization. Among the structure variables, rural community setting ($n=6$) was included as a variable representing the macro-level concept of geography’s importance to development. Rural and urban community setting was examined as a factor influencing how absenteeism impacts young adult outcomes (Ansari et al., 2020), cigarette smoking and tobacco usage (Berg et al., 2018, 2020), poverty (Berry & Hirschl, 2017), attitudes toward marriage (Kefalas et al., 2011), and marijuana use trajectories (Warner, 2016). As noted previously, population markers for what was being considered “rural” were not always provided, which limits the information available on the variables representing the macrosystemic structure.

The rural culture was described in three studies. Participants in focus groups described the rural culture as “independence, stoicism, and a work hard, play hard attitude” (Greene et al., 2018, p. 197). While these cultural values are not solely present in rural areas or representative of all rural communities, the unique combination of these values appeared to epitomize a rural culture that encouraged risky behaviors (e.g. binge drinking, drinking and driving). Additionally, Greene et al. (2018) described social cohesion as a risk factor in rural culture due to gossip and perceptions among tight-knit community members. This may be unique to small communities where it is easy to recognize an individual’s vehicles, behavior patterns, and acquaintances. The rural culture also promoted earlier marriage and a natural progression from a long-term relationship to a marital

relationship for young adults in rural communities (Kefalas et al., 2011). These attitudes may be described as “old fashioned”; however, participants in this study described marriage as part of the natural order of adult roles and without other opportunities in rural communities, the next logical choice.

The rural economy and low socio-economic status were hypothesized to influence young adult development with Kefalas et al. (2011) and San Antonio and Kaplan-Bucciarelli (2020) describing a rural economy based on farming, which afforded the option of purchasing a home and establishing a family, as well as a rural economy based on low-wage jobs in service, agriculture, manufacturing, and retail industries. Poverty rates in rural areas (16.4% in 2017) have surpassed those in urban areas (12.9% in 2017) (USDA, 2019). While poverty is not a uniquely rural macrosystem level risk factor, it is more prevalent in rural areas, especially those more remote and rural counties (USDA, 2019). Rural areas suffer higher poverty rates and this macrolevel factor of low socio-economic status was evaluated as a risk factor in four studies including cigarette smoking (Berg et al., 2018), poverty during the transition to adulthood (Berry & Hirschl, 2017), and marijuana use trajectories (Warner, 2016). Beal and colleagues (2016) highlighted how family socio-economic status (measured as parental education) influenced expected and actual timing of young adult role transitions, highlighting how class constrains opportunities. Youth, whose parents had lower educational attainment, were more likely to anticipate early transitions into adult roles and experienced early adult role entry when compared to their peers. Lower social class is an important predictor of earlier role transitions and lower educational attainment for rural young adults. This is closely linked to the rural economy that historically experienced higher levels of unemployment and less job growth than urban areas, until the COVID-19 pandemic (Cromartie et al., 2020).

San Antonio and Kaplan-Bucciarelli (2020) described the marginalization of white rural young adults without a high-school diploma, highlighting the lack of systems to support them as they experience trauma and loss during adolescence and a lack of economic opportunities in their communities. This lack of systems, again, may be heterogeneous to the region of the study (rural New England); however, rural communities in general face a lack of institutions dedicated to improving the transition for these marginalized populations (Jensen et al., 2003). As a process variable, discrimination and victimization were described in reference to Black, Latinx, and LGBTQ populations in rural areas, highlighting that they may be at greater risk for experiencing discrimination in rural communities (Carrillo, 2016; Barton et al., 2018; Pachankis et al., 2020), which may be detrimental to their well-being and development. This is not a novel finding, indeed, in a recent book edited by Crockett and Carlo

(2016), authors review the risk and protective factors of rural, minoritized young people and their families and identify the macrosystemic process variables that predict well-being. Here too, a lack of systems to support rural minority young people experiencing discrimination and victimization is a concern in rural communities and creative ways will need to be employed to provide support to these marginalized young adults.

Exosystem Level Exosystemic structural level variables included proximity to nature (Schmitt-Wilson et al., 2019); neighborhood characteristics (e.g. neighborhood class, neighborhood ethnic diversity, neighborhood racial composition, street connectivity, neighborhood exposure) (Warner, 2016); and the legal and physical environment as risk factors for young adult drinking and driving (Greene et al., 2018). These variables and concepts were all cited as shaping and contributing to work and educational aspirations, residential aspirations and choices, and risk behaviors (i.e. substance abuse and drinking and driving). Warner (2016) assessed neighborhood characteristics and identified a rural protective effect, but only for Black youth living in low-income, rural neighborhoods and not white youth living in low-income, rural neighborhoods. The physical environment also was cited as being important in young adult development. The lack of transportation options, sparse population, and knowledge of roads were highlighted as risk factors for drinking and driving, while proximity to nature was cited as a major reason for young adults migrating to rural communities (Greene et al., 2018; Schmitt-Wilson et al., 2019).

Microsystem Level At the microsystem level, process variables like Adverse Childhood Experiences (ACEs) and child-maltreatment appear to be more prevalent in rural communities (Sedlak et al., 2010; Crouch et al., 2019), which was specifically cited as a reason for selecting a rural sample to study how this impacted rural young adult development (Liu et al., 2020). Carrillo (2016) cited the lack of Latinx representation in rural teachers in primary and secondary education as a barrier to feeling at “home” in the new Latin south. Likewise, adaptive racial socialization, assessed by Murry et al. (2014), is not necessarily unique to rural families, but unique to Black families. This concept addresses caregivers’ communications, behaviors, and interactions with children to facilitate adaptation, a sense of belongingness to one’s race, and coping skills to deal with the realities of racism and racial discrimination in the U.S. Finally, social risk factors and protective factors for drunk driving behaviors unique to rural communities included modeling by community members, the “least drunk drive” rule, and community tragedies (i.e. young people dying as a result of drunk driving) (Greene et al., 2018).

Individual Level Finally, individual level process variables and concepts that appeared to be unique to the rural context were attitudes and normative beliefs and trial (experimental) behaviors and experiences related to drinking and driving (Greene et al., 2018); work and residential aspirations (Kefalas et al., 2011; Crockett & Beal, 2012; San Antonio & Kaplan-Bucciarelli, 2020; Schmitt-Wilson et al., 2019; Sharp et al., 2020); and community attachment (Sharp et al., 2020). Work and residential aspirations were identified as individual level factors as aspiring to live in a rural community is uniquely rural, as are certain occupational aspirations (e.g. farming). These specific work and residential aspirations are especially integrated into the rural context and structured by economic opportunities in the area. Community attachment refers to the emotional investment in place (Humon, 1992). However, in somewhat counterintuitive findings, Sharp et al. (2020) found that rural adolescents who reported high aspirations for their future education and career success reported the highest levels of community attachment but were the least likely to report wanting to remain in their home county. This is also contrary to findings that youth with higher attachment to their communities in high school were more likely to live in a rural area in young adulthood (Johnson et al., 2005; Looker & Naylor, 2009).

By using White et al.’s (2016) contextual heterogeneity approach to contextually informed theorizing to analyze and categorize variables within the research literature, the current study highlighted approaches to evaluating both structural and process variables that represented various systems within the ecosystem of rural young people. Notably, most of the structural variables operated at the exosystem and macrosystem levels. Process variables were represented in the microsystem, individual, and macrosystem ecological systems. The identification of both structural and process variables was necessary to identify both gaps for potential study and ideas for new ways to integrate these variables into future studies to increase the understanding of how the rural context influences young adult development.

Discussion

Both empirical and anecdotal evidence suggest that adolescents living in rural communities experience several unique challenges in the transition to adulthood. However, much of the contemporary research examining the behavioral and social development of young adults has failed to consider these unique individual and contextual characteristics of rural life. The purpose of this review was to examine the contemporary literature on the transition to adulthood to better understand how researchers define rural in their study samples, identify the theories that guided their work, and

integrate rural variables, concepts, and outcomes into the research design, methods, and discussion. Following guidelines proposed by PRISMA for scoping reviews (Tricco et al., 2018), 25 published empirical articles, 19 quantitative and 6 qualitative, were identified and coded for analysis. Five themes emerged from the textual analysis and highlight both the strengths and weaknesses of contemporary approaches to studying the transition to adulthood.

Rural Context and Geographic Representation

The analysis found that half of the studies included in this review (52%) lacked a clear definition of the population size or community characteristics of the rural sample. While journal page limits, intent, and focus may limit the ability of researchers to present a full contextual description of the rural community participants were recruited from, contextual information is important. Rural communities are heterogeneous with differences in community strengths and deficits to be accounted for in the interpretation of results. Providing additional contextual descriptions can help communities identify commonalities and generalize findings to their own young adult populations, improving the reach of policies and programs designed to help young adults. Notable exceptions include Pachankis et al. (2020) who provided a rich description of the “high-stigma, low-resource” rural area where they tested their intervention. The thorough description was intentional to aid in the replication and dissemination of similar online, brief writing interventions to improve mental health and health risk-behaviors for LGBTQ young adults. Greene et al. (2018) also provided significant contextual details about the rural area in Montana where they conducted their research on risk and protective factors for drinking and driving. These contextual descriptions are necessary to extend findings to other communities and identify differences in risk and protective factors that may influence the efficacy of evidence-based interventions.

In addition, there are geographic gaps in research in states and regions in the U.S. with rural populations (see Table 2). Notably, the Northwest and Southwest were not represented in this scoping review. The Midwest was mainly represented by one state, Iowa, and the Southeast was represented mainly by populations in the state of Georgia. Not all rural communities are alike and it is important to extend research on rural communities to other geographic locations that include racial, ethnic, resource, and cultural diversity. For example, The American Communities Project (2020) evaluated counties across the U.S. and identified 15 different types of communities that represent the diversity of rural, urban, and suburban communities in the U.S. Researchers could use these county designations, or other demographic indicators, to identify rural communities that are underrepresented in the literature to focus new research on young adult

transitions and development. Namely, rural counties identified as Hispanic Centers, Evangelical Hubs, Aging Farmlands, African American South, and Native American Lands (American Communities Project, 2020). To prevent further marginalization of populations in these rural communities, researchers should partner with local community stakeholders and members of the community to design studies and interventions to best meet the needs of these populations.

Nationally representative datasets, such as Monitoring the Future and The National Longitudinal Study of Adolescent to Adult Health, offer opportunities to examine rural young adult transitions across geographic regions in the U.S. (Furstenberg, 2016). Although there are limitations (e.g. age of datasets, measurement, attrition) these datasets could be used to better understand rural young adult transitions in a variety of rural contexts. An exciting new study, Adolescent Brain Cognitive Development (ABCD), may offer opportunities in the future to examine biological and behavioral development into young adulthood (ABCD, 2020). Through research that expands geographic representation, along with clear descriptions and definitions of the rural community, future research can overcome these current limitations, making the results more generalizable and accessible to programs and policies designed to help young adults in diverse rural contexts.

Developmental and Life Course Theoretical Integration

Life Course Theory was the most common theoretical framework used to describe the transition to adulthood in the studies identified in this scoping review. This theory is uniquely suited to explore the influence of context on the transition to adulthood. However, completing the transition to adulthood also includes emerging developmental tasks like success in work and romantic relationships (Roisman et al., 2004). Thus, a focus on the adult social roles in the domains of work, education, parenthood, romantic relationships, and living independently should include both a developmental (i.e. how do behaviors and competence in the salient developmental tasks of adolescence predict emergence into adult roles) and contextual focus.

However, the importance of including both behavioral health and social development outcomes in studies should not be overlooked. Further integration of social development and behavioral health outcomes would help to better understand how these emerging developmental tasks and social roles are related to the risk behaviors and mental health of young adults. Some studies have accomplished this to a degree. Maggs et al. (2012) found that single young adults who were working fulltime and living with their parents reported the lowest levels of global life satisfaction and the highest cigarette smoking prevalence when compared to the

other patterns of adult social roles. Young adults without children who worked full time, had high levels of achieved education, and were both single and in committed relationships reported the highest levels of alcohol, marijuana, other drug use, with married young adults with children reporting the lowest use of these substances. Six patterns of adult social roles were assessed for their relationship to what the researchers termed as “illegal acts” which measured how often in the last six months the respondent “damaged property; had a physical fight; drove when drunk; used marijuana; used other drugs; did something else illegal” (Osgood et al., 2005, p. 349). Slow starters, those reporting the fewest adult role transitions and from lower social classes, reported the highest rate of illegal behaviors. Certainly, the increased responsibilities of child rearing may explain the disparate use of substances and illegal behavior between patterns of adult social roles; however, additional research is needed to understand how these developmental transition patterns are related to more comprehensive pictures of behavioral health, especially in rural young adult populations. Therefore, researchers should integrate developmental theories that consider the contextual and cultural factors influencing the transition, combined with developmental tasks that include the emergence into culturally relevant adult social roles and functioning in young adulthood.

Achieving Full Integration

Analysis of the design and method of the selected empirical research studies suggests that the rural context could be fully integrated in studies by: (a) integrating predictor variables, concepts, covariates, and moderators that are uniquely rural; (b) describing sample selection that includes the rationale for selecting the rural sample; and (c) proposing research questions and hypotheses that include the rural context. Those studying rural populations are encouraged to use White et al.’s (2016) proposed strategy for contextually informed theorizing to achieve all markers of *full integration*. By theorizing how structural and process variables and concepts salient to the rural context relate to young adult development, researchers can provide a clear description and rationale for the rural sample and integrate these variables and concepts into research questions/hypotheses. Researchers should aim to integrate rural specific variables and concepts present at all levels of the ecological system, while achieving *full integration* in sample selection, research questions and hypotheses, and discussion and implications. Examples of specific variables/concepts and recommendations for integrating those variables/concepts are highlighted in the following paragraphs. These recommendations assume that inherent within the process of contextually informed theorizing, salient rural structural and process variables will be identified and described, more detailed sample descriptions

will emerge, and contextually informed research questions will develop.

Rural Structural Variables

In several studies included in this scoping review, rural culture was highlighted as a structural variable that influenced risk behaviors. Similarly, researchers interested in integrating cultural variables could use qualitative methods to identify, from the populations themselves, what the rural ethos is in their context of interest. To be contextually specific, socio-economic status and poverty should also include structural variables unique to that rural community, such as informal education and nonmonetary means of meeting daily needs that do not conform to the traditional ways of measuring this variable (White et al., 2016). To accurately describe the economic status of participants and operationalize this structural variable, care should be given to what resources and deficits are present in the rural context. Murry et al. (2014) and Greene et al. (2018) provided structural explanations and support for the process variables included in their study, grounding them in the rural context. Other studies could integrate region and community-level structural variables such as reporting of child maltreatment incidences or ACEs data from their state and percentages of teachers of color in rural schools. Even if they could not be included as specific variables, framing the research study using this structural information would help extend findings to rural contexts with similar geosocial structures. Certainly, Warner’s (2016) findings highlight that a protective effect for one demographic is not the same for another demographic. Thus, researchers should identify the exosystem level variable(s) important to their research question and seek to integrate them into the study. As previously argued, this attention to contextual details will aid in applying findings to other communities who identify similar structural variables.

Rural Process Variables

At the individual level, identification of new contextually appropriate process variables is needed to establish their relationship to development in the rural context. Notably missing from the selected studies was exploring how a sense of place influences rural young adult development. Community attachment is part of this concept, but it is more complex. Sense of place is how people feel about and relate to the environment they live and grow up in and is represented by three constructs: place attachment, place dependence, and place identity (Humon, 1992; Jorgensen & Stedman, 2001). San Antonio (2016) found how salient a sense of place was to rural young adult development. “Participants spoke about expanding their experience with diversity and having a sense of place that was connected to being in a community with

other people and, for some, having access to natural settings for solace and comfort” (San Antonio, 2016, p. 255). Future research should integrate the constructs related to sense of place, as these are likely heterogeneous among minoritized and majority populations in rural communities. In addition, future studies should explore process variables that are observable in their rural context of interest. For example, mixed age peer groups in small, rural Midwest communities.

Rural Mesosystem Variables

There was a lack of variables at the mesosystem level in all studies, not just those more specific to the rural context. Mesosystem level factors are more difficult to identify, as they describe the interactions between microsystem level influences. In a study of ecological factors that influence adolescent alcohol misuse, Ennett et al. (2008) found that the interactions between family, school, and friends can both buffer against substance abuse or amplify the effects of family, school, and peer group risk factors. These findings required complicated statistical analyses (i.e. multilevel modeling) and data sources including longitudinal data from adolescents, longitudinal data from participating adolescents’ parents, social network analysis of peers, and connecting this data to U.S. Census tracts and block groups. The level of complexity required to analyze mesosystem level risk and protective factors may explain why there was a lack of these factors in the reviewed studies.

Rural Research, Practice, and Policy

Likewise, there were missed opportunities to integrate discussions of how rural findings can be used to inform future research, practice, and policy. For example, there are disparities in access to health interventions in rural communities (Hartley, 2004; Centers for Disease Control, 2019). The specific recommendations for policy changes could provide clear actionable suggestions to rural communities looking to address substance use, mental health, and economic and health access disparities for rural young people. By addressing the growing health and economic disparities between rural and urban communities, researchers should be making a case for how their results inform policy, prevention, and research on rural outcomes moving forward. For instance, San Antonio and Kaplan-Bucciarelli (2020) recommend the use of narrative career counseling and life design dialogue to provide support for disconnected low-income young adults. However, their recommendation of counselors, career development specialists, and mentors necessary to help these young people does not call for additional funding programs or training in these methods for rural practitioners. The authors generally describe partnerships between schools and community organizations with examples of

Trauma Sensitive Schools and Makerspaces as opportunities to support young people and provide meaningful career explorations. Researchers describing actionable steps and highlighting ideas would give rural communities a place to start when trying to improve outcomes for rural young adults and revitalize rural communities.

Prevention and Intervention

Similarly, prevention and intervention research should document the structural and process variables that influence rural, marginalized young adults’ development. Gottfredson and colleagues (2015) provided updated standards for prevention science research including effectiveness and scaling up. Within their recommendations, clear language outlining the range of application for the intervention as well as anticipated limitations to application with different populations, settings, times, and outcomes is recommended for high-quality evidence-based programs. As this review has documented, there are rural contextual factors that influence risk behaviors in adolescents and young adults. Thus, prevention and intervention research should continue to document both structural and process variables salient to intervention and prevention outcomes. For example, Pachankis et al. (2020) clearly documented the high-stigma, low-resource rural context that their brief, portable writing interventions were tested in. The researchers recommended continuing to integrate local community input, guiding language and situational prompts, to ensure that internet-based writing interventions remain applicable to sexual minority populations they are designed to help. These clear descriptions of structural (few LGBTQ-specific formal support resources) and process (discrimination and victimization) variables and recommendations for implementation in other communities provide an excellent example for future research.

Only six of 25 studies were identified as reaching *full integration* while 13 of the 25 studies were limited or lacking integration of rural in the discussion and implications sections. Although the focus of each of these studies may not be on the unique ways the rural context shapes development of young adults, increasing the number of studies that are fully integrated in both study design and discussions will only benefit this population and help reduce disparities within rural communities.

Strengths and Limitations

There are several strengths and limitations to this scoping review. First, the review was not meant to be exhaustive, but a scope of the recent general literature about the transition to adulthood for rural young adults. Bias in selecting articles for the full review was reduced using clear exclusion and inclusion criteria; however, relevant studies may be missed.

More targeted systematic reviews on specific behavioral health or social development outcomes would improve conclusions about how rural young adults are faring in these areas. The scoping review is limited by the choice of search terms to define the transition to adulthood. The authors hoped to include both social and developmental outcomes with the inclusion of developmental and role trajectories; however, relevant literature could be excluded that did not use these terms. A strength of this scoping review is the focus on the empirical results that were peer-reviewed and validated. However, findings and conclusions may be limited by the inclusion of only peer-reviewed sources. “Gray literature” which includes unpublished dissertations and reports could color the findings and recommendations generated by this scoping review. The findings in “gray literature”, although not peer reviewed, may have explored variables representing the rural context and provided additional details about the rural communities they studied. This information would be useful for further evaluating geographic representation, theoretical approaches, outcomes, integration of rural, and systems-levels of variables. This scoping review focused on the U.S. and insights could be gained by exploring how rural young adult development is impacted by the rural context internationally. Additionally, scoping reviews are not meant to assess the quality of the empirical evidence. More targeted systematic reviews that focus on specific risk and protective factors unique to rural contexts, timing of adult social roles in young adulthood, and interventions for behavioral health outcomes would inform the field of the quality of relevant research in these areas.

Conclusion

Rural young people are transitioning to adulthood amid constrained economies and opportunities and the research into their development should be expanded to identify how this context is influencing their long-term outcomes. The results of this scoping review have highlighted several challenges for researchers who seek to better understand the transition to adulthood among young adults in rural contexts. The recommendations contained in this review advocate for more theory driven research that seeks to fully integrate what it means to be rural. Future research should incorporate the rural context in all stages of the research process and provide actionable policy implications to improve outcomes. Through outreach efforts, policy briefs, and collaborations with other experts, researchers can influence policymakers to consider the rural context in decision making. This means clearly defining the rural context; using a theoretical framework, such as life course theory, that defines the transition to adulthood; integrating behavioral health and social development outcomes; and identifying and integrating

structural and process variables at multiple ecological system levels that represent unique aspects of rural communities. Only then will researchers be able to build a foundation of research that recognizes the diverse experience of rural young adults from across the U.S. and can translate that knowledge into actionable policy, prevention, and intervention activities.

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Declarations

Conflict of interest The authors report no conflict of interest.

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*Denotes article included in scoping review.

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