

ARTICLE

Understanding resilience from the perspective of Appalachian centenarians

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Abstract

Centenarians worldwide are growing rapidly and thriving as they age. This growth reflects their desire to thrive beyond personal and societal obstacles, a hallmark sign of resilience. However, little research exists on centenarians' perspectives about their lived experiences that reflect resilience. Therefore, the purpose of this secondary analysis was to capture the perspectives of Appalachian centenarians about (a) living through their childhood and early adulthood in an area known for poverty and isolation, and (b) exploring the resilient nature that emerged from their narratives. With a qualitative descriptive design, 21 community-dwelling Appalachian centenarians participated in face-to-face interviews. They resided in either their homes or assisted-living facilities. Transcripts were analysed with Neudorff's method of content analysis. Within three themes, 11 sub-themes were identified: (a) working hard for the family, (b) loss of a loved one, (c) gender and race discrimination, (d) impact of isolation on health, (e) living a simple life, (f) using family/community support, (g) consuming and appreciating food from their farms, (h) spirituality, (i) generosity of spirit, (j) living a clean life, and (k) happy, good and loving life. Collectively, these themes and sub-themes reflected how the centenarians overcame and grew from challenges and adversities to become resilient. Consequently, these findings show that understanding resilience from centenarians' perspectives can significantly contribute to the potential for longevity.

Keywords: centenarians; ageing; social challenges; resilience; adversities; perspectives

Introduction

Often collapsed into the oldest-old category of those age 85 and older, centenarians are emerging as 'one of the fastest growing segments of the population' in the global community (Goodman, 2019: para 1). This estimated growth is occurring in Japan (30,000), Spain (10,000), the United Kingdom (9,000), China (7,000) and Italy (5,000) (Goodman, 2019). For the United States of America (USA) from 2010 to 2018, the centenarian population experienced an increase from 53,364 to 93,927, almost a doubling of the population (US Department of Health and Human

Services, 2018; US Census Bureau Population Division (USCBPD), 2019). Furthermore, the USA has 2.87 centenarians per 10,000 of the population (USCBPD, 2019). This growth reflects the capacity of centenarians to overcome personal and societal obstacles, a hallmark trait of resilience.

Resilience is the capacity to survive and thrive from the obstacles and adversities related to traumatic life events and lifelong personal challenges (Richardson, 2002; Herrman *et al.*, 2011; Levasseur *et al.*, 2017). A resilient person accesses personal characteristics and inner strengths to survive personal and social stressors while adopting a positive attitude about oneself and life. This outlook builds up a person's ability to overcome and grow from stressful challenges. This resilient nature is evident in centenarians given that they have lived beyond 100 years of age.

If the mere existence of centenarians personifies resilience, then there is a critical research question that needs to be explored within these older adults aged 100 or more:

- What can be learned about resilience from centenarians' viewpoints about their long lives?

Few studies, if any, explore the perspectives of centenarians about their lived experiences and acquired knowledge that contributes to resilience. Therefore, the purpose of this qualitative descriptive designed secondary analysis was to capture the perspectives of 21 Appalachian centenarians about (a) living through their childhood and early adulthood in an area known for poverty and isolation, and (b) exploring the resilient nature that emerged from their narratives.

Relevant literature

Living conditions in Appalachia during the early to mid-1900s

Appalachia is largely a rural area covering 110,000 square miles of mountainous terrain from New York to Mississippi. During the early to mid-1900s, this area was known for its poverty, primitive lifestyle/culture and social/geographical isolation from the industrialisation of the USA (Anglin, 2002). This environment and social atmosphere significantly shaped the unique adversities and challenges that centenarians had to survive if they grew up in Appalachia. There were further Appalachia-specific challenges if one was raised on a farm in Appalachia. Farming was a family affair where all family members, including very young children, worked the land (Elam, 2002; Campbell *et al.*, 2003). The land fed and clothed the family as well as provided some cash from the crops for things they could not grow (Campbell *et al.*, 2003). These centenarians faced family and community separation at an early age if they left the farm to work in factories. This change exposed them to new and potentially dangerous environmental stressors such as impoverished living conditions, homelessness, food shortage, and/or increased risk of engaging in and/or being victims of criminal acts (Campbell, 1921; Campbell *et al.*, 2003; Andreescu and Shutt, 2009). They had to deal with economic and personal obstacles related to medical/health problems and emotional/mental health issues. These new city dwellers were challenged to identify and secure social resources to live, health care and adequate wages (Campbell,

1921; Andreescu and Shutt, 2009). In general, female and non-white centenarians confronted racism, misogynistic attitudes and emotional issues (Walls and Billings, 1977; Anglin, 2002; Elam, 2002). They lived through the Great Depression and two world wars (Walls and Billings, 1977). These historical events presented centenarians with multiple stressful challenges at a time when they were starting out as young adults. Thus, Appalachian centenarians have survived and lived beyond attacks to their sense of self, isolation, trust issues or separation from their support system.

The developing centenarian research

Centenarian research has emerged from the examination of archived public and census data with an emphasis on quantifiable factors about centenarians' survival and successful ageing (Willcox *et al.*, 2007; Arnold *et al.*, 2010; Gersten *et al.*, 2010; Hensley *et al.*, 2010; Zeng and Shen, 2010; Tigani *et al.*, 2012; da Rosa *et al.*, 2014; Cho *et al.*, 2015; Gu and Feng, 2018). While researchers measure the connection between centenarians' challenging experiences, traumatic events, social stressors and current conditions, there is minimal exploration of centenarians' perspectives about living through these experiences. There is little understanding of the impact of the lived experiences on the possible emergence of resilience from these various experiences

Some studies have explored resilience in older adults. In a sample of 11 older adults aged 75–93, resilience was reflected in their outlook about life and the pleasure of overcoming adversities as well as just living (Dubovská *et al.*, 2017). With 200 older adults aged 56–97, Fullen and Granello (2018) reported that resilience varied across age groups. With multivariate analyses, resilience was higher for the age groups above 70 years of age. For Kok *et al.* (2018), 11 older adults (aged 78–93) believed that they were resilient because they overcame adversities, were open to social activities, were determined to survive and refused to let a low socio-economic status determine their life. Scelzo *et al.* (2018) identified the perception of resilience in 29 older adults aged 90–101, without separating the centenarians' perspectives from the nonagenarians. This merged group of older adults' perspective about resilience reflected their acceptance of adversities and sheer determination to live beyond the challenges through their positive outlook and connection to their family and community. Resilience has clearly been investigated in older adults. However, as indicated in these studies, older adults have been aged 56 and older, with the collapsing of centenarians into age groups with younger individuals.

The centenarian's perspective

An exploration of centenarians' viewpoint(s) taps into the richness of their perspective about confronting challenges, dealing with traumatic events and not just surviving, but thriving. An introspective exploration provides the contextual meaning of their lived experiences, which are critical in understanding their resilient nature. In a few studies, centenarians have shared that over a lifetime they have tapped into their inner strengths for survival (Bennett *et al.*, 2016; Hutnik *et al.*, 2016; Ratan and de Vries, 2020). These studies show that centenarians' viewpoints

indicated an awareness of their resilience from their survival of challenging experiences. Consequently, they have survived adversities to live a long life. However, it is the development and progression of this awareness or knowledge from their lived experiences that significantly contribute to thriving beyond survival. Resilience emerges from centenarians' (a) perceptions about their lived stressful experiences, (b) viewpoints on overcoming these challenges, and (c) perspectives on using this information to live a long and full life. This process is evident in the current study, which indicates that resilience can contribute to the continued independence and successful ageing for older adults.

Methods

Design

A qualitative descriptive design was used for this secondary analysis with 21 centenarians. This design facilitated a 'straight description' of the centenarians' narratives to the interview questions within a natural setting (Sandelowski, 2010). With this naturalistic inquiry, there is minimal if any manipulation or interference of the targeted variables (Sandelowski, 2010; Colorafi and Evans, 2016; Kim *et al.*, 2017). The design supported the use of a convenience sampling for a broad and expansive collection of data through individual interviews about participants' experiences, which led to a description and understanding of resilience from the participants' perception (Sandelowski, 2010; Colorafi and Evans, 2016; Willis *et al.*, 2016; Kim *et al.*, 2017). The qualitative descriptive design promoted the use of low inference in describing the data from the words, phrases, sentences and syntax used in the narratives (Colorafi and Evans, 2016; Kim *et al.*, 2017). This approach resulted in the interpretations and understanding being driven primarily by the data instead of complying to a particular philosophy like a descriptive phenomenological design (Willis *et al.*, 2016) or a targeted outcome or goal like a grounded theory or ethnographic approach (Colorafi and Evans, 2016; Kim *et al.*, 2017).

Furthermore, this design promoted the use of content analysis to identify the patterns and clustering in the data according to the data, which contributed to the understanding of resilience from the experiences (Sandelowski, 2010; Vaismoradi *et al.*, 2013; Colorafi and Evans, 2016). Researchers can qualitatively describe the data by quantifying certain data so that the emphasis remains on the contextual meaning of the words, phrases, sentences and/or syntax (Colorafi and Evans, 2016; Kim *et al.*, 2017). Another approach, such as thematic analysis, would limit the ability of the descriptions and/or themes to be solely from the presenting data, which does not comply with the goal of a qualitative descriptive design. Thematic analysis involves high inference or more interpretation of the data by the researchers so that the descriptions and understanding reflect the participants' perception(s) of the experiences and the researchers' perception(s) of the narratives, explicit and implicit (Vaismoradi *et al.*, 2013; Colorafi and Evans, 2016). Consequently, the qualitative descriptive design allowed participants to share their viewpoints/perspectives and facilitated the analysis and interpretation of the richness from the narratives for a description and understanding of resilience.

Sample

The data for a convenience sample of 21 centenarians were extracted from the Tennessee Treasures study database and published summaries. This parent study used a cross-sectional convenience sample to collect the short life summaries from centenarians residing in Knoxville, Tennessee. The summaries were based on the centenarians' perspectives about their lives. The summaries were published online on the Office on Aging website. These centenarians were also selected from the Knoxville, Knox County Office on Aging (OOA) Centenarian Database: (a) age 100 or older, (b) cognitively intact or with mild intellectual impairment, (c) able to speak English, and (d) born and/or grew up (from early childhood) in Appalachia. The study was approved by the Institutional Review Board of the University of Tennessee-Knoxville.

Setting

The OOA Centenarian Database was used in the parent study, Tennessee Treasures. The OOA collaborates with health-care facilities in Knox County to maintain a database of individuals who are 100 years old or older. Also, anyone in the community can call the OOA to have a friend or relative added to the list. The Database is used for the annual spring delivery of flowers to the centenarians of Knox County, for which the Principal Investigator (PI) is one of the volunteer deliverers.

Study procedure for parent study

Recruitment

A letter of introduction was included in each delivery of flowers to centenarians in the OOA Centenarian Database. Follow-up calls were made to the centenarians and their next of kin to explain the study and set up a time for an interview with those willing to participate. A second letter of introduction was sent to potential participants who did not respond to the follow-up call. Appointments were made with centenarians who expressed interest in participating.

Interview

The PI went to the centenarian's home or residence at the arranged time where the study was explained and questions were answered. The informed consent, which includes a guarantee of confidentiality and anonymity, was signed. Next, the Short Portable Mental Status Questionnaire (SPMSQ) was administered. A convenience sample of participants were eligible for the study. The interview questions were asked and answered after eligibility was determined.

The interview commenced with a grand tour open-ended question to encourage the participant to talk about their past and their perspective(s) of living to be 100. The questions included were:

- (1) What was it like growing up 100 years ago?
- (2) Why do you think you have lived this long?

Relatives of the centenarians were welcome to be at the interviews to prompt stories they had heard all their lives. The interview ranged from 30 to 60 minutes in duration. The centenarians were able to talk for whatever time they wanted. For some, the time was 10 minutes and for others it was 60 minutes. Therefore, the average duration was 30 minutes.

The interviews were audio-taped for transcription by the PI. The recorded narratives were audible, and the content was understandable, therefore, none of the interviews were repeated. During data collection, it was paramount that the participant felt comfortable and had minimal distractions (if any), which resulted in the exclusion of gathering field notes. Data saturation was not a consideration because a primary objective was to gather as much data as possible, even at the risk of over-saturation. Narrative summaries were posted on the Office on Aging website. Corrections were made to the published summaries if reported to the PI by the participant and/or relative who was present during the interview.

Instruments

Demographic data were collected with the PI's demographic data form. The age was self-reported and confirmed by calculating the age from the indicated date of birth and date of interview.

The SPMSQ was administered to determine if the participants met the cognitive status of the study's inclusion criteria. Each participant needed to be cognitively intact or have only mild intellectual impairment (a score of 4 or less on the SPMSQ). 'Persons scoring in the mildly impaired range can handle routine self-care matters but may require the assistance of others in intellectually complex matters' (Pfeiffer, 1975: 437). Relatives were at the interview for all participants with mild intellectual impairment (a score of 4) where the relative provided feedback that stimulated the participants' recall of their experiences. This approach ensured that participants were able to recall their early lives. The SPMSQ is a well-established instrument consisting of ten questions. One point was received for each error. A score of 4 (out of a possible 10) or fewer errors (mild impairment) was the cut-off. Scores on this instrument have been correlated with a diagnosis of organic brain syndrome and test-retest reliability is reported to be better than 0.8 (Pfeiffer, 1975).

Analysis

The extracted data consisted of demographics (age, date of birth, gender, marital status, ethnicity/race, education and living arrangement), cognitive data and responses to the interview questions. Descriptive statistics were used to characterise the sample's distribution, frequencies and variability. Qualitative data were analysed using Neuendorf's (2017) content analysis method to discover the leading themes of these Appalachian centenarians. Neuendorf's content analysis uses the principles of the scientific method to analyse qualitative data without a reliance on the quantification of qualitative data. According to Neuendorf, content analysis is a systematic summary about the characteristics of the text from a narrative. The summary describes the textual content and identifies the relationship(s) within and between the textual content. The summary collectively facilitates an understanding of the

contextual meaning from the perspective(s) of the person making the narrative. Furthermore, 'content analysis is not limited to the types of variables that may be measured or the context in which the messages are created or presented' (Neuendorf, 2017: 17). Content analysis is 'one tool for testing relationships within verbal and non-verbal communication' and therefore will provide the contextual meaning of this communication for 'a full understanding of human behavior' (Neuendorf, 2017: 42). The two researchers independently coded the narratives in order to identify the units of analysis (a piece of information that related to aspects of life experiences, wellbeing, ageing and longevity). Each researcher created a coding tree. The units of analysis were initially grouped according to the topics expressed in the text. These categories generated the themes. Secondly, the themes were ordered by the frequency of the units of analysis within each theme. These enclosed units of analysis were thirdly grouped based on their meaning and/or context, which created the sub-themes. Finally, the sub-themes were ordered by their impact on resilience. The researchers met to compare their coding trees in order to determine the similarities and differences in the identified themes and sub-themes. In the event of a disagreement in categorisation of units of analysis, discussion of the rationale for placement of the unit of analysis ensued until agreement was reached. This involved combining and re-grouping the units of analysis. In the case of non-agreement, the unit of analysis would have been discarded, which did not happen in the analysis of these transcripts. NVivo 11.0 (Windows) was also used to verify the themes and sub-themes that emerged. With NVivo, the themes were identified from the occurrence of similar phraseology of the units of analysis. The sub-themes were determined by (a) identifying similar words, (b) computing the frequency of these similar words, and (c) computing the degree of association for the strength of the word association. As a result, the sub-themes were generated when two or more units of analysis within a theme had almost identical associations.

Findings

For this study, ten participants (48%) demonstrated no cognitive impairment and 11 (52%) had mild impairment. All participants were at least 100 years of age (mean = 101.4, standard deviation = 1.5). The sample was predominantly female (95%, $N = 20$), white (90%, $N = 19$) and widowed (95%, $N = 20$) (see Table 1). Most (81%, $N = 17$) had completed high school and nine (43%) were college graduates. Seventy-one per cent ($N = 15$) were raised on a farm. Therefore, the average participant was a woman who grew up on a farm, and, in her teens, was married and employed outside the home. She lived through the First World War (1914–1918) as a young adolescent, survived the Great Depression (1929–1939) in her twenties and experienced the Second World War (1940–1945) in her thirties. Furthermore, the participants showed a high degree of independence. Thirty-three per cent ($N = 7$) lived alone in their personal home and five (24%) lived in the personal home of family members. The remaining nine (43%) lived in assisted-living facilities with the capacity to perform their own activities of daily living.

Several themes and sub-themes emerged from the transcribed narratives. There were three major themes and 11 sub-themes (see Table 2).

Table 1. Demographics

	N (%)
Age:	
100–101	10 (48)
102–103	8 (38)
104–105	3 (14)
Birth year:	
1904–1906	7 (33)
1907–1908	8 (38)
1909–1910	6 (29)
Gender:	
Female	20 (95)
Male	1 (5)
SPMSQ:	
0–2 errors	10 (48)
3–4 errors	11 (52)
Ethnicity:	
White	19 (90)
African American	2 (10)
Marital status:	
Single	1 (5)
Widowed	20 (95)
Education:	
0–8th grade	4 (19)
High school	3 (14)
Business school, post-secondary	5 (24)
College graduate	8 (38)
Post-graduate	1 (5)
Living arrangement:	
Living alone, personal home	7 (33)
Living with family, personal home	5 (24)
Living in assisted living facility	9 (43)

Note: SPMSQ: Short Portable Mental Status Questionnaire.

Challenges of growing up in Appalachia

This theme conveys our centenarians' perspectives about growing up in Appalachia, where their very existence was defined by farm work, and living under challenging conditions. They faced discrimination. They also had to accept the possibility of not

Table 2. The three themes and 11 sub-themes

Challenges of growing up in Appalachia	Resources used to overcome challenges	Living a good life
<ul style="list-style-type: none"> • Working hard for the family • Loss of a loved one • Gender and race discrimination • Impact of isolation on health 	<ul style="list-style-type: none"> • Living a simple life • Using family/community support • Consuming and appreciating food from their farms 	<ul style="list-style-type: none"> • Spirituality • Generosity of spirit • Happy, good and loving life • Living a clean life

reaching the average life expectancy of 50 in the early 20th century for either themselves and/or loved ones.

Working hard for the family

This sub-theme reflects the work requirement from a very young age. Anyone considered family was expected to work hard for the survival of the family and community. Several talked about working on the farm during their childhood:

I worked hard. I worked on the farm. Chopping hay. Everything you had to do on a farm.

[I] ploughed the corn. [I] hoed it and weeded it.

I helped with the tobacco when I was 12. Pappa would take me out there. Tobacco is sticky.

This expectation even occurred during time spent with extended family members. One participant recalled:

I went to live with my aunt who had three kids. I had to work to keep them up. I went to work. I bought the food. I was old enough to work. I brought home my salary and therefore help feed my aunt and three cousins.

Another said:

I had an aunt and when she got sick I went and stayed with her. [I was] nine years old. And I'd cook. Imagine that. I'd milk and cook and everything.

One centenarian shared how she laboured during summertime:

When [I] got [to my sister's] for the summer, [I] changed clothes to make cabbage pies. When my two weeks were over I thought I was dead.

This expectation persisted even after moving to a new residence. Although one participant 'slipped off and got married' at 15 and moved with her husband down the

road, she, the participant, continued to work on the family farm. Some went to the cities to work. One centenarian said:

After school I stayed and worked on the farm. I came to Knoxville at 16 to get a job at a knitting mill. All my sisters went to work there.

Loss of a loved one

This sub-theme relates to the frequency of losing a family member during their early years. Four centenarians lost a father while they were growing up. One father died of typhoid fever at age 34, another passed away at 45 and one died in a railroad accident. Another centenarian recalled losing her father at a young age:

My father was a big [man] but I don't remember. I was too young when he passed.

Two lost a mother while growing up. One mother passed away due to a gallstone operation. One centenarian's daughter shared that her mother (the participant) was 16 when 'Mamaw died'. Other centenarians experienced the loss of a child as young adults. One participant said:

[I] married an alcoholic and I had two children. My first one was stillborn. I went to the doctor and he said there is no life in your body. It was hard to understand. I still don't.

Another participant stated:

Then, I miscarried twins. I hated that.

Gender and race discrimination

This sub-theme captures the experiences of discrimination based on gender or race. Despite the rich history of diverse populations in Appalachia, African American centenarians experienced racial discrimination as children and adults. One African American centenarian told of not being allowed to ride the school buses as a child. She went to a coloured high school and then to a historically black college founded in 1875, just ten years after slavery was abolished. She became a teacher who made significantly less than her white colleagues. She also shared that later

We had to move. They built the city buildings. They were just getting us black folks out of the way.

In regards to gender discrimination, women were expected to take on the role of wife and mother, not going on for higher education. This was especially true in Appalachia where children usually ended their formal education at the 8th grade.

Impact of isolation on health

This sub-theme reflects our centenarians' understanding of their health conditions and adaptation to the limited health services. In the hills of Appalachia, families lived in isolation and could not access health-care providers. Our centenarians

experienced 'a lot of sickness' and having 'the flu in 1918 was a terrible' sickness. One participant recalled:

I've had a lot of trouble in my life. Been sick and everything. Because I was supposed to die when I was a baby. My mother had the measles when I was born. And they poured cold water down me to get [the measles] to break out.

Another shared that in

1920 I came down with TB [tuberculosis] of the bone. It was February when I came here. They put me in a cast. Must have been about 12. I stayed in the cast for months and months.

They put my Aunt Helen [as a baby] in a coffeepot [percolator] for an incubator to keep her warm.

These centenarians clearly learned to be resourceful in treating health situations.

Resources used to overcome challenges

Embedded within this theme is how the centenarians faced the unavoidable challenges that came with being born between 1905 and 1910, as well as those from the Great Depression and the Second World War. These challenges occurred when our centenarians were starting families and getting established in jobs. The resources they used were simple living, family support and/or acceptance of diets limited to food grown on the farm. These resources contributed to an inner strength that lasted throughout their lifetime.

Living a simple life

This sub-theme illustrates our centenarians' understanding of limiting spending to provide the essentials of life and live within one's means. The Depression influenced living so much that the challenges and stressful complications became the norm for some.

We didn't have a penny. We didn't have anything. Not one penny. Naturally, when [I got] married we couldn't afford to buy [any meat].

[We] worked hard and save money ... we didn't eat out. Vacations were doing things around the house.

For others, the Depression had little impact because they lived a simple life:

Honey I accept hardships even now. Frugal. I've always been frugal. I think that has a lot do with your health. Being happy. Stress, that will get you. High tension.

A daughter shared that

They never went hungry during the Depression. They always had something to eat. We grew cattle.

Walking was the mode of transportation in their younger years. In the cities, buses and/or trains were used only if they could be afforded or were socially acceptable. This was consistent even during, wartime as one centenarian stated:

We hitchhiked during World War II.

Centenarians nevertheless demonstrated a tenacious nature when dealing with challenges:

[I] lived a simple life. Honesty counts a lot.

I live a common life. Don't worry. They [the centenarian's family] all know that I did not worry about nothing.

Using family/community support

This sub-theme illuminates the breadth, intensity and duration of support from the family and/or the community. Families helped each other to meet the needs of food, housing, work and transportation. One centenarian remembered:

I had to walk three miles [to school], and my uncle said, 'She is not walking that far.' And he came and got me and brought me down here. I had to take a test. And I didn't pass the 8th grade test so I had to take the 7th grade version. [My uncle asked me], 'Do you want to take a business course?' ... So he takes me and talks to [the business college administrator], and I went there for a year and then I got a job.

One centenarian recalled that she and her two single sisters lived together 'to get through the hard times'. The community equally played a pivotal role in the survival of the family during hard times by being involved in parenting children:

When I was a senior in high school, if it hadn't been for my girlfriend's father, I would have starved to death. We [only] had pineapple and cottage cheese [to eat].

In some situations, children were sent to live with community members.

Consuming and appreciating food from their farms

This sub-theme is indicative of our centenarians' awareness and appreciation of food that was acquired and eaten during hard times:

We ate the things [that] we grew on the farm.

We grew it and canned it.

Another shared that

...we grew corn and potatoes and onions and about everything ... if you wanted to eat.

For others, the selection of food items was limited.

Back then, we barely ate.

We did not have much to eat ... When I was little. Milk and bread.

We lived on potatoes, mostly. Mashed potatoes.

We were raised on pinto beans. [The participant's daughter added]: And she still eats lots of pinto beans and potatoes.

Well, we had all the milk and butter. Had plenty.

We always had a pitcher of buttermilk and a pan of sweet potatoes on the table waiting for us when we got home from school.

We didn't even hear anything about balanced meals. We didn't hear anything about it back then.

For one centenarian, food was part of a routine:

I always ate three meals a day. Mother had meals ready. We always sat down at mealtime and we had nutritious food. We ate together. Tried to eat the right kinds of food. But I never dieted.

Living a good life

Times were challenging everywhere; yet, this theme encompasses what our centenarians embraced as an outlook about life that influenced their daily living. They had an intrinsic desire to survive and thrive beyond their adversities. This determination encompassed an approach to life that was silently yet consistently and pervasively integrated in their existence. Over half of the centenarians indicated this desire with statements about living a good life.

Spirituality

This sub-theme represents a trust in a higher power as a part of their existence that influenced all aspects of life. Some centenarians relied on a higher power for the strength to accept life's events.

God just takes care of me.

The Lord has seen me through the years. Has seen me through my problems. The Lord has seen me through many a heartache[s].

My prayers to the Lord [have] seen me through.

One participant's daughter shared that her father

...told the Lord, 'After I retire, every time the doors are open, I'll be in church.'
And he got blessed by being the custodian.

One centenarian indicated that

I live[d] a good clean life and worked in the church all my life.

Another quoted the serenity prayer:

God, give me the ability to change what I can, accept the things I cannot change,
and the wisdom to know the difference.

When asked the secret for her long life, she replied:

These are the things I try to do for long life: (1) love, you've got to love somebody
and somebody's got to love you, and (2) the Lord.

Generosity of spirit

This sub-theme reflects a giving nature with an appreciation for life. For our centenarians this nature was prevalent in their lived experiences. As a child, one centenarian was given a bag of kittens and told to drop them in a creek:

They were the cutest little things ... And when I got there, there were cats in the
back [of the creek]. When I got back to the cats [in the bag, they] were gone.

Other centenarians expressed a generous spirit and a love for life:

I made cookies by the bushel and gave them away. I loved everybody. I had a lot of
good friends. So, I told them I'll take all the hugs I can get.

I've had a life that's been worth living because I did a lot of good. Cookies to the
nursing home and things like that. I never was out of work.

My prayers to the Lord [are to let me] teach people right. Trying to help.

Living a clean life

This sub-theme reveals the centenarians' views on how to live a healthy life. Over 50 per cent commented on a lifestyle that emphasised health with minimal vices:

I lived a good clean life.

I didn't drink or smoke or anything like that. I just did what a sensible person did.

Good clean living, no smoking, drinking, eating well and exercising are [my]
recommendations for longevity.

[I believe in] clean living. [I] never smoked. [I] never had drinks.

For our centenarians, a sensible lifestyle was key to a healthy one.

Happy, good and loving life

This sub-theme conveys an approach to life that influenced their daily living. The most common statement from over 50 per cent of our centenarians was 'I lived a good life'. The desire for a good life was always a part of their lives from childhood through old age. Several centenarians made statements indicative of a happy, good and loving life since childhood:

Childhood was good; I had a wonderful youth.

I had a wonderful childhood.

I've had a good life.

I had a wonderful life.

I just live a good home life.

Therefore, these comments resonant with a perspective shared by one participant:

I had a pretty good life.

Discussion

Living to reach 100 years of age entails more than just overcoming the challenges and traumatic events of life. It reflects how centenarians accessed resources from their lived experiences and employed this knowledge or awareness so that they could thrive beyond daily adversities. Such is the case with our community-dwelling centenarians in this qualitative study. They shared their viewpoints about what it was like growing up and living through the early 20th century in Appalachia from early childhood to young adulthood. They overcame personal and social challenges by accessing their inner strength while embracing a desire for a good life. Emphasis was placed on what they could and did do instead of what they could not do. This determination aligns with resilience, which was pivotal in their achievement of 'living a good life'. Therefore, our centenarians are a testimony to the importance of resilience in achieving longevity. To the authors' knowledge, this is one of the first studies to describe resilience from the centenarians' perspectives.

Our centenarians showed resilience by retaining a high degree of independence in their functioning and an intact cognitive status for over 100 years. None demonstrated the low degree of independence that is reported about residents in nursing homes (Kincel, 2014; US Department of Health and Human Services, 2017). Over half of the female centenarians had completed post-high school graduate schooling, a truly remarkable achievement. This finding has been substantiated by previous research (Zeng and Shen, 2010; Gu and Feng, 2018). A surveyed sample of 3,343 Chinese centenarians exhibited a high degree of resilience by being cognitively intact and independent in their functioning for over 100 years (Zeng and

Shen, 2010). Even when compared to other age groups, these centenarians reported the highest level of resilience. Centenarians' cognitive and functioning status significantly contributed to their capacity to adapt positively to adverse challenges in their life, indicative of resilience, especially psychological resilience (Zeng and Shen, 2010; Gu and Feng, 2018).

The emerging sub-themes added depth to this exploration about resilience because the sub-themes are consistent with the meaning of the shared narrative text, which demonstrates dependability. The sub-themes purposively reflected the growth and development of the centenarians' resilient nature. They, the centenarians, recognised the challenges and traumatic life events, overcame them by accessing their internal/external resources and lived beyond them by adopting the determination for a good life. Our centenarians expressed a belief that a resilient nature gave them the power to survive and thrive beyond exceptionally hard work as children, limited and almost insufficient resources for basic needs, and threats to emotional, psychological wellbeing. These centenarians embraced the hard work, accepted a simple life and appreciated the beauty of just living without depending on material possessions. They received support from the family, which was an extended one that included relatives, friends, neighbours and anyone else in their immediate community.

Regarding transferability, the emerged sub-themes confirm the findings of other qualitative studies about centenarians. Furthermore, these 11 sub-themes give contextual meaning to both quantitative and mixed-method studies about resilience in centenarians and older adults. The sub-themes 'Working hard for the family', 'Loss of a loved one', 'Gender and race discrimination' and 'Impact of isolation on health' reflect the centenarians' perception of their past physical functioning, emotionality, health impairment and social expectations/resources. These sub-themes triggered for our centenarians the need to access their inner strength and resources in order to deal with challenges and traumatic events. Accessing one's inner strength is a step towards a resilient nature. These sub-themes reflect the initialisation of a resilient nature. This beginning, as demonstrated in our centenarians, has been characterised in research as the ability to recognise one's inner strength and to embrace the capacity to survive daily adversities (personal and/or socially) (Arnold *et al.*, 2010; Dubovská *et al.*, 2017; Lévassieur *et al.*, 2017; Scelzo *et al.*, 2018). These sub-themes give depth and add a personal perspective to the quantitative research findings where the challenging lived experiences are described as predictors of exceptional longevity (Gersten *et al.*, 2010; Cho *et al.*, 2015). In other words, these sub-themes reinforce the importance of using centenarians' perspectives to augment current centenarian research. Clearly, centenarians have recognised their inner strength that initiated their resilience and potential for longevity.

From the centenarians' viewpoints, the sub-themes 'Living a simple life', 'Using family/community support' and 'Consuming and appreciating food from their farms' relate to the continued development of a resilient nature. The centenarians' resilient nature was fortified when they accepted and pursued a simple life. Through their family's involvement, the perspective of resilience intensified. This sense of belonging and familial support was escalated when centenarians realised the importance of turning to their family for food and supplies during exceptional

difficult times like the Great Depression. The implications of these sub-themes are substantiated by the literature. They give context to the positive association between adaptation and family involvement when describing centenarians' adaptability to adverse changes (Hensley *et al.*, 2010; Scelzo *et al.*, 2018; Ratan and de Vries, 2020). Through these sub-themes, it is evident that inner resources contribute to an association between thriving and socialisation in the community (Dubovská *et al.*, 2017; Levasseur *et al.*, 2017; Kok *et al.*, 2018; Ratan and de Vries, 2020). Furthermore, the research supports how these sub-themes reflect thriving even when living in poverty and/or economically distressed conditions from unavoidable situations (Bennett *et al.*, 2016; Kok *et al.*, 2018).

The sub-themes 'Spirituality', 'Generosity of spirit', 'Living a clean life' and 'Happy, good and loving life' perpetuate our centenarians' resilient nature. Collectively, they contextually personify the centenarians' desire to identify, operationalise and perpetuate a good life amidst their adversities (personal, traumatic, social and chronic). The centenarians understood that having a good life was achievable by recognising, accepting, addressing and living beyond the stressful experiences. Unavoidable challenges and barriers (personal and environmental) were a part of life. However, for our centenarians, it was having the desire to live a good life that allowed them to see the beauty of living, to appreciate the simpler aspect of life and to find their purpose, reason for being. These sub-themes are supported by research where centenarians shared that a focus on living a good life significantly contributed to their longevity (Zeng and Shen, 2010; Hutnik *et al.*, 2016; Scelzo *et al.*, 2018; Ratan and de Vries, 2020). Furthermore, centenarians believe that they deal with and positively process very difficult life events because they consider themselves 'lucky' or 'fortunate' (Hutnik *et al.*, 2016), embrace 'laughter as an important part of their life' or adopt an optimistic and communicative lifestyle (Kato *et al.*, 2012). For some older adults, a spiritual life or belief was described as a major strategy for a resilient nature in a phenomenological study exploring the daily use of resilience strategies for a long life (Reis and Menezes, 2017). Through their sense of spirituality, these older adults acquired a perspective to cope with and survive beyond daily adversities and traumatic situations. Furthermore, having a happy or healthy outlook about life is a re-occurring theme with centenarians (Dubovská *et al.*, 2017; Lopez, 2019; Ratan and de Vries, 2020). Therefore, our sub-themes collectively encompass the contextual meaning of maintaining a resilient nature.

These 11 sub-themes show how the centenarians' resilient nature contributes to longevity. As resilient individuals, centenarians are aware of how to process social challenges/changes and identify the outlook(s) needed for healthy outcomes in the most compromising situations. They have learned to be resilient by recognising the importance of avoiding impulsive reactions/responses to stressful events while using available resources to address them, within one's capabilities. Furthermore, centenarians realise that being resilient reflects a willingness to be involved in life and the various challenges that are part of living because it is only through working together and support from which healthy outcomes result. A resilient nature contributes to the capacity of being active not passive in life. Therefore, resilience contributes to longevity as the ability to grow an unshakeable core of calm, strength and happiness (Hanson and Hanson, 2018).

Overall, the findings from this study demonstrate that resilience results from a process that (a) starts from experiences during the early childhood to initiate certain behaviours and/or feelings, (b) further develops or intensifies throughout adolescence/pre-young adulthood where the feelings and/or behaviours are perpetuated, and (c) becomes the norm or trait in young adulthood where experiences reinforce the importance of the behaviours and/or feelings in surviving and thriving. This process of becoming resilient and thriving due to it can have implications in understanding centenarians in other countries.

Like Appalachian centenarians, the importance of past experiences and situations that centenarians in other countries have lived through are minimised or restructured to become non-significant occurrences and/or 'cute anecdotal memories'. These experiences are characteristically labelled as 'situations best forgotten'. However, understanding how a centenarian as a child perceived these experiences and situations can significantly contribute to an understanding of the actions and behaviours taken by the centenarian during their young adulthood. Granted, when interviewing centenarians from other countries, the labelling of the themes and sub-themes may be different, as well as the distribution and prevalence of the emerging themes/sub-themes from the experiences. However, the overall impression will be the same: become resilient to survive situations, experiences and catastrophic events, and fortify this resilient nature in order to thrive over time.

Furthermore, the findings from this study can be instrumental in highlighting and heralding the intrinsic and extrinsic value of centenarians in other countries. It is indispensable to unlock the meaning and value of centenarians' past experiences in order to explore and investigate the role of becoming resilient for survival and thriving on the centenarian as well as her or his family, friends, community and society. Persons in other countries can begin to understand how at a young age the centenarian accepted what resources/support were accessible and internalised them into her or his life for survival. Once that occurred, these internalised resources/support allowed the centenarian to thrive and become a contributing and viable member of society, as well as being a defining characteristic of the culture in that country. Therefore, the findings from our study can have a significant impact on the appreciation and the value of centenarians in other countries for their foundational and sustained role in perpetuating and stabilising their country's culture while advancing the society. Clearly, centenarians, in the USA and other countries, are the gatekeepers of the culture.

Limitations

The small sample size of 21 limits the generalisability of this study. Another limitation was the male-to-female ratio, which differs from the census data for centenarians in the USA. Only 5 per cent of the participants were male instead of the 21 per cent reported in the 2018 US Census (USCBPD, 2019). While this difference as a percentage suggests that the study could have included only female participants, it would not have reflected the centenarian population in Appalachia, which consists of both male and female centenarians. Most importantly, it would have not included the important male perspective of growing up in Appalachia. Self-reported data are subject to reliability issues. Future studies need to include

an aggressive community-outreach effort to establish a professional relationship with the centenarian community.

Conclusions

Living to be over 100 years of age does not mean poor cognitive status, limited activities of daily living or the loss of independence. It does mean that one has lived through stressful events and unavoidable challenges. Our Appalachian centenarians, by living where they did and when they did, had more stressful challenges in their lives than they contemporaries living in other parts of the USA. Furthermore, our Appalachian centenarians experienced more adversities than older adults living even a decade or two later. Nevertheless, they developed and nurtured their resilient nature by recognising the challenges, dealing with them through personal resources from internal and external sources, and pursuing a good life that continued for over a century. Therefore, understanding resilience from centenarians' perspectives can contribute significantly to the potential for longevity.

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