



# “How are You Doing?” on the Healthy Aging of the Community-Dwelling Oldest-Old in the Shadow of the COVID-19 Pandemic

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## Abstract

**Objective:** Globally, the oldest-old population is growing rapidly. Little is known about the perceived well-being of the community-dwelling oldest-old, especially during the COVID-19 pandemic. This study examined the oldest-old's perceptions of aging well and the COVID-related impacts on them.

**Methods:** Semi-structured in-depth interviews with 22 adults aged 85 or above were conducted with purposive sampling methods. Transcripts were analyzed using thematic analysis.

**Results:** Four main themes emerged: 1) sustaining functional ability; 2) staying active with a positive attitude; 3) feeling grateful for support from society and family; 4) COVID-19-related anxieties and policies destabilizing their well-being.

**Discussion:** This study provides direct evidence from the oldest-old on how they maintained their well-being. While they valued support from society and family, COVID-19-related measures disturbed their routines and prevented them from self-attaining well-being. The findings should be considered when developing interventions for this vulnerable group.

## Keywords

Aging well, Oldest-old, COVID-19, Healthy aging

## Introduction

The number of oldest-old adults has been rising globally, as life expectancy continues to increase (United Nations, 2002). Hong Kong's population is aging as well, with its oldest-old (people aged >85 years) being the fast-growing age group (Centre for Health Protection, 2021). It is estimated that the number of people in Hong Kong aged 75 or above may increase to 1.4 million, accounting for 18.3% of the total population, by 2038 (Census and Statistics Department, 2017). While Hong Kong leads the world in life expectancy (Centre for Health Protection, 2021), and 91.9% of older people are community-dwelling (Census and Statistics Department, 2017), little is known about how well this oldest-old group is doing, particularly viewed from their own perspective. This might potentially negate the effectiveness of any policy and services attempting to address their needs in attaining healthy aging, which is considered one of the core attributes of aging well (Friedman, 2012).

The concepts of healthy aging and aging well are somehow interrelated. Aging well is viewed as a non-medical approach

to promote health and general well-being as one ages (Hawkins, 2005). This concept focuses on 'maintaining satisfying and healthy lives as people age, by exercising the choices that optimize healthy, active and secure lives' (United Nations, 2002). By comparison, healthy aging is "the process of developing and maintaining the functional ability that enables well-being in older age" (WHO, 2020). Recently, the WHO further suggested that healthy aging should be composed of three main components: functional ability, intrinsic

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capacity, and environments (WHO, 2020). These reflect a person's physical and psychological capacities, and how that person interacts with the environment that he/she is living in (Michel et al., 2021). As such, healthy aging can be conceptualized as the optimization of functional capacity, having considered the limitations due to normal age-related physiological and psychosocial changes. In this connection, the concepts of aging well and healthy aging were adopted in this study to help explore how the group of community-dwelling oldest-old experienced. While achieving healthy aging necessitates joint actions across various sectors in the community, there is much an individual (intrinsic factors) can do to stay healthy in advanced age. It is therefore of fundamental importance to explore how the oldest-old, those with relatively more constraints, perceive their own well-being at this stage of later life if relevant interventions and policy are to be planned and implemented effectively. The current study applied this concept to interpreting and understanding community-dwelling oldest-old adults' perception of healthy aging.

Relatively stable living environments have changed significantly due to the COVID-19 pandemic. To save lives and reduce the spread of the virus, local and international guidelines were launched, including social distancing, requiring people to be home-bound, which limited the mobility of individuals and their in-person interactions with others. Such unprecedented changes have affected the well-being of many people (Lim et al., 2020), including that of the oldest-old. Recent studies have suggested that there appears to be an age gradient in terms of mortality and morbidity from COVID-19, with older people being the most vulnerable (Applegate & Ouslander, 2020; Ho et al., 2020; Le Couteur, 2020; Zhou et al., 2020). The oldest-old have been found to be the group most likely to get seriously sick (Centers for Disease Control and Prevention, 2021) from the infection, and their residual bodily functions are being challenged tremendously by the pandemic.

To date, only a few quantitative studies have been conducted to promote healthy aging (Leung et al., 2020), validate the concept of intrinsic capacity (Beard et al., 2021), or analyze factors related to healthy aging based on open databases (Feng et al., 2019). Still unknown is how older people, especially the oldest-old, feel about their surrounding environment, and what their experience of healthy aging is, not only physically but also holistically. This knowledge is especially needed, as the environment has largely changed since the COVID-19 pandemic. A study from Ireland involving 150 older people (with a mean age of 80 years) reported that 40% of them had experienced "worse" or "much worse" mental health during lockdown, and a decline in physical health (Bailey et al., 2021). A survey conducted in Hong Kong also reported an almost twofold increase in symptoms of depression and anxiety during the pandemic compared with 5 years ago, with the stress levels among older people showing a far larger increase than those seen in younger generations

(Zhao et al., 2020). On the other hand, another study showed that older people had more mental resilience than younger populations during the COVID-19 pandemic (Vahia et al., 2020). These inconsistent results further highlight the need to understand the meaning of healthy aging from the perspective of the oldest-old.

## Methods

### *Study Design and Sampling*

The aim of this study was to explore how well community-dwelling oldest-old adults were doing and, in particular, the impact of the COVID-19 pandemic on this group. A descriptive qualitative research design was adopted for this study. Participants were ineligible if they had any condition that might hinder them from attending the interview, including (1) cognitive impairment, as determined by a total score of  $\geq 3$  in the Mini-Cog© test (Borson et al., 2003); (2) depression, as defined by a score of  $\geq 8$  in the 15-item Geriatric Depression Scale; and/or (3) difficulty hearing, either with or without a hearing aid. The reason for not involving depressed persons in this study was to avoid the risk of including feelings of grief rooted in their pre-existing depressive condition rather than the pure perceptions of healthy aging in the shadow of the COVID-19 pandemic, which the study aimed to explore. Potential participants were referred to and contacted by staff from the Community Centres for Older Adults, which had established connections with older people in the neighborhood prior to the pandemic. The purposes and details of the study were explained to the potential participants by a research assistant (RA). Their informed consent was obtained before the interviews were conducted.

### *Data Collection*

Data were collected through semi-structured interviews with the participants between February 20 and March 19, 2021, when Hong Kong was experiencing the third wave of the COVID-19 pandemic. Twenty-two in-depth interviews were conducted with eligible community-dwelling older adults by three interviewers (the first and last authors) and a research associate with a master's degree in psychology. All of the interviewers were trained researchers with experience in conducting interviews with older people. The members of the research team collaborated to produce the interview guide (see Appendix A), which was designed to elicit experiences of healthy aging from a group of oldest-old people who were living in the community during the COVID-19 pandemic.

To facilitate conversations focusing primarily on the priorities and views of the interviewees, interviews began with "Grand Tour" questions (Leech, 2020), such as "Could you describe a typical day that you have recently been living?"; "What does it feel like to live a near-centenarian life these days?"; and "What has changed in your life since the

pandemic began?” More specific questions were asked following the Grand Tour questions. These included how they perceived being a near-centenarian or centenarian survivor, what it meant to them to be able (or unable) to attain healthy aging in everyday life, whether there was anything they thought might have helped them to age well and/or function well in the current situation, how often they had contact with other people, how the pandemic had affected their daily life, and whether they had advice on moving on and continuing to live well through the pandemic. The questions were articulated based on the theoretical frameworks of healthy aging from recent literature concerned with healthy aging, longevity, COVID-19 and the decade of healthy aging, and the vulnerability of the oldest-old under the COVID-19 pandemic (WHO, 2020).

Most of the interviews were conducted in community centers, with a few conducted in the homes of the participants if they preferred. To adhere to safety precautions against COVID-19, the interviewers and participants wore face masks and maintained a distance of 1.5 m from each other throughout the interviews. The median length of an interview was about 1 hour. An interview guide was used to help the interviewers stay focused on illuminating the essence of experiences shared by the interviewees. With the participants' consent, all interviews were audio-recorded and transcribed verbatim. Data collection ceased when the themes and subthemes were saturated, meaning where few new codes were emerging from the transcripts.

### **Ethical Considerations**

Ethical approval was received from the University's Institutional Review Board (ref no.: HSEARS20200722001). All participants were well informed about the purposes of the study and gave their informed consent to take part in the study. Respect for privacy and confidentiality was maintained throughout the study, including in relation to the individual interviews (conducted in a private room) and in the management of the data. All of the data were anonymized, and only the researchers who were involved in the study were granted access to the data.

### **Data Analysis**

This study used thematic analysis (Braun & Clarke, 2008) to analyze the interview transcripts. This approach was deemed to be appropriate, because it allowed for rich descriptions of the participants' views without excessive interpretation (Braun & Clarke, 2008; Holloway & Todres, 2003), which matched well with the purposes of the study. The members of the research team (the first, second, and last authors) coded the transcripts independently and met regularly to discuss the identified “meaning units” and emerging themes. Consensus was high among the coders, with minor disagreements on some of the terminology that was used. Through discussion,

agreement was reached on the accepted terms for coding. During the process of conducting the thematic analysis, the following phases or steps were followed in handling the data. Phase 1: The three researchers familiarized themselves with the data by thoroughly reading all of the transcripts and field notes. Phase 2: Initial codes were generated by peer debriefing among the research team members, using a coding framework. Phase 3: The research team used detailed notes about the development of concepts and themes, and diagramming to make sense of the concepts and themes. Phase 4: The team met regularly to vet the themes and subthemes that had emerged, and returned to the raw textual data to determine its adequacy to support the themes as needed. Phase 5: The team defined and named the themes by peer debriefing until a team consensus was reached. Phase 6: The findings were written up in a report (Braun & Clarke, 2008).

To ensure trustworthiness, the interviewers in the study used follow-up questions to gather fuller, relevant, and focused data from the participants. The prolonged process of becoming familiar with the data, testing for referential adequacy by examining the raw textual data against the themes, and engaging in regular researchers' debriefings, provided an external check on the data analysis process, which helped to increase the credibility of the study (Lincoln & Guba, 2008). The team also provided a detailed description of the participants and setting, and revealed the complete study process to assist in the assessment of the findings so that readers can judge the transferability of the study (Korstjens & Moser, 2018). The findings are data-oriented and not based on the views or inclinations of the research team members. This was accomplished by exercising reflexivity throughout the study process. Members of the research team took note of their preconceived views of the subject matter throughout the research process to prevent their individual perspectives from affecting the outcome of the research.

## **Results**

### ***Demographic characteristics of the participants***

Of the 22 successfully interviewed participants, eight were male (36.4%) and 14 were female (63.6%), and their ages ranged from 86 to 101 years. At the time of their interview, five of them were living alone and 17 were living with family members (spouse or children). In terms of mobility, 14 did not need any assistance, six needed to use crutches, and two had to use a wheelchair to move around. A detailed description of the participants' characteristics is displayed in Table 1.

Four main themes emerged from the interviews: (1) sustaining functional ability was perceived as fundamentally important to well-being and longevity; (2) staying active and keeping a positive attitude was the key to a happy centenarian or near-centenarian life, (3) feeling grateful for support from family and society, and (4) COVID-19-related anxieties and

**Table 1.** Demographic Information of the Participants.

Pseudonyms	Gender	Age	Living Arrangement	Marital Status	Mobility
A	M	88	Living with spouse	Widowed	Without any aid
B	F	90	Living with children	Widowed	Without any aid
C	F	91	Living with children	Widowed	Without any aid
D	F	95	Living with children	Widowed	Cane
E	F	94	Living with children	Widowed	Cane
F	F	96	Living alone	Widowed	Walking frame
G	M	86	Living with spouse and children	Married	Without any aid
H	F	92	Living with domestic helper	Widowed	Without any aid
I	M	90	Living with spouse	Married	Without any aid
J	F	87	Living alone	Widowed	Without any aid
K	F	101	Living with spouse and children	Widowed	Cane
L	F	99	Living with domestic helper	Widowed	Wheelchair
M	F	96	Living with children	Widowed	Without any aid
N	M	94	Living with children	Widowed	Without any aid
O	F	88	Living alone	Married	Cane
P	M	94	Living with spouse	Married	Without any aid
Q	M	98	Living with spouse	Married	Cane
R	F	91	Living alone	Widowed	Without any aid
S	M	91	Living with spouse	Married	Without any aid
T	F	88	Living alone	Widowed	Without any aid
U	F	89	Living with spouse and children	Married	Cane
V	M	86	Living with children	Widowed	Without any aid

social isolation were barriers to the well-being of a near-centenarian or centenarian. Figure 1 provides an example of the data-grounded approach used to identify the themes in the study.

### *Sustaining functional ability as the key to centenarian well-being*

Interviewees contemplated that to live long, the priority was to maintain functional ability. To them, being able to walk around at will and to meet their basic daily needs without much difficulty were signs of well-being and, in their words, “a blessing” to a centenarian’s life. When asked how life was for him, Mr A (88 years) replied,

I feel I am doing all right, given this age. Like I said, I am in the middle: not the best nor the worst. I am still able to move around and do stuff for myself on a daily basis. It’s a blessing that I still have the ability to do so. I’m grateful to receive my family’s support, and grateful to myself as well that I am doing fine in completing my daily tasks.

This is not to suggest that the interviewees were focused merely on meeting their own basic needs as the primary goal of maintaining functional ability. Mrs B (90), when asked about her perspective on how well she has been leading such a long life, replied,

It’s important to be able to help others. I take good care of myself, and I just do what I can to assist friends who need help.... I help others and others help me too. I feel good that I still have the ability to contribute to society by volunteering.... I do volunteer work for fund-raising events on the street, and sometimes I volunteer to visit patients in hospital (before the COVID-19 pandemic), to chat with them, you know.

Being able to move around freely seemed to contribute to giving the interviewees opportunities to build and maintain relationships with their neighbors and others. As Mr S (91) noted,

I am delighted to be able to come down to the community center, to tour around freely or to take part in social gatherings. The center has been closed during the COVID-19 pandemic, but we can still greet neighbors and friends in one of the public parks located in our estate. These social activities are good for us. We are so much happier when we have them.

### *Staying active with a positive attitude*

Having lived to such an advanced age as a centenarian or near-centenarian, the interviewees had witnessed World War II, as well as economic and social hardships in the 1950s and 60s. They have seen the most adverse scenarios and now, facing the COVID-19 pandemic, they refused to break easily.

Meaning Units (What is spoken)	Shared Meaning (What the text speaks about)	Themes
<p>"My physical ability is still good, and I can go wherever I want. My life is really comfortable and free." --Uncle G (86)</p> <p>"Participating in social activities will make you feel happier, no matter what kinds of activities you participate in." "When you are connecting with others, you will feel happy while you chitchat or laugh with them."---Uncle S (91)</p> <p>"Provide a helping hand to others if you are able to help; don't harm yourself or others. The most important thing is that wherever I go, people will help me, and so will I [help others]." ---Granny B (90)</p>	<ul style="list-style-type: none"> <li>▪ Feeling content that basic needs are met</li> <li>▪ Helping others, helping myself</li> </ul>	Sustaining functional capacity
<p>"I usually go to the market to do grocery shopping around three times per week. Do you know that grocery shopping requires brain power too? If we don't use it, we will lose it." - --Granny E (94)</p> <p>"When we have time, we go to yum cha and do Luk Tung Kuen exercise. We have a group of friends, dozens of people, who have been doing Luk Tung Kuen in that open area for decades." ---Granny J (87)</p>	<ul style="list-style-type: none"> <li>▪ Being independent</li> <li>▪ Keeping the brain active</li> <li>▪ Integrating exercise into the daily routine</li> </ul>	Staying active with a positive attitude
<p>"There are always unsatisfactory things happening in our lives; however, there is no way to avoid them. So just let it be, and see how you choose to face it. Each family has its own problems; just accept that there is no perfect one. It's okay to not be okay." ---Granny C (91)</p>	<ul style="list-style-type: none"> <li>▪ Benefiting from family ties and support</li> <li>▪ Being simple and cheerful; it's up to us</li> </ul>	
<p>"The government is quite good, as it provides subsidies and help for senior citizens. We have discounts on taking transportation, and medical vouchers. We don't have to worry too much about money wherever we want to go, or when we need to see a doctor." ---Granny U (89)</p> <p>"I have different meals provided by the elderly center.... I feel grateful and enjoy meeting friends, learning health-related information, and studying different things in the elderly center. I have learned a lot in my later years, and it's really good here. They have a Chinese medicine practitioner, a nurse, and physical fitness instructors. The elderly center is becoming better and better." ---Granny R (91)</p>	<ul style="list-style-type: none"> <li>▪ Upholding a positive attitude towards life</li> <li>▪ Staying connected with the community</li> </ul>	Feeling grateful for support
<p>"I don't want to drag others down.... I don't want to live to be so old. I am worried about dragging others down." ---Granny D (95)</p> <p>"I used to participate in activities in the elderly center, but now rarely go there due to the pandemic. There are no activities to participate in at all." ---Granny F (96)</p> <p>"I am currently relying on CSSA, which is about HK\$4,000 a month, and I used it all to hire a domestic helper. With a little money left, I can buy food and pay for living expenses. I can barely live on this small amount of money, and it's really annoying that life is so hard." ---Granny F (96)</p>	<ul style="list-style-type: none"> <li>▪ Feeling like a burden to others</li> <li>▪ Living with COVID-19: the reality of social distancing</li> <li>▪ Sapped by financial insecurity</li> </ul>	COVID-related barriers to well-being

**Figure 1.** Example of the process of analysis from quote to theme.

Rather, they strove to remain active and positive. As Mrs K said,

No matter what, I turn away from bad / negative thoughts. I say a prayer and leave it to a higher power. As long as I do that, I calm down and have peace of mind – that is a good experience and feeling. My mind remains clear and silent, and my heart feels better too. Staying positive is my way of staying worry-free.

Mrs R (91) concurred, saying that she had been staying active and positive as she grew older. "Life is full of rough moments; no one is exempt. That is life – it's only natural. It all

depends on how you deal with them, doesn't it? Every family has its own problems; nothing is perfect, but we need to accept it and endure it." Mrs C (91) further explained how she lived a happier life by being positive: "It is my motto to stay positive – just be happy; eat more and better; come to the day center to have fun. Go out and move around – don't just stay home and do nothing." The importance of staying positive was echoed by Mr A (88): "When you are at the age I'm at, you have to let go ... staying simple and optimistic is of ultimate importance, plus you can control your own emotions, can't you? If you get too bothered by the tediousness of this and that, things can get too complicated...."



When asked how he stayed active, Mr N (94) explained, giving examples,

I exercise every day. I go hiking, and sometimes jogging in the nearby park. We often go for dim sum early in the morning, then exercise. I do long-distance walking, you know, just to keep my body moving / active.

Staying active was not only about the body, but also the mind. Our interviewees were keen to keep their mind or brain active by ‘exercising’ their brain regularly. As Mrs E (94) said,

I enjoy going to the market. I do that two or three times a week. You know why? Because going there and buying food there can help to keep my brain active. You would know what I mean if you did that too.... You do not get dementia so easily if you keep using your brain, right?

One can keep the brain active without going outdoors. Interviewee Mrs U (89) had developed a unique way of exercising her brain, “I play it indoors – at home or at the center before the outbreak of COVID-19: it’s mahjong [a Chinese tile-based game]. That is such a good brain exercise and it helps to train my memory. I enjoy playing the game whenever we have enough players.”

### *Feeling grateful for family and social support*

The interviewees were recruited through local community centers for seniors. Many of them received financial or other social and family support and expressed full gratitude for that support. Some interviewees even declared that community centers were almost like “a second home” to them (Mrs C, 91). Many community centers are run by non-governmental organizations to serve those in need in the community. In general, they provide multi-dimensional support to seniors in the community, including educational talks, courses, and elder care services. These allow seniors, including some of the interviewees in this study, to get connected and to age well in place. As Mrs R (91), who had been receiving meal services from the nearby center, put it,

I have a full variety of dishes at every meal on a daily basis. That’s what we are asking for: stability and decent food. That’s all. We meet friends there (at the center), and chat and laugh together. Staff there also provide health talks, which help us to understand some health-related information.... They even have a Chinese traditional medicine service to care for our old bodies.... They are doing a great job there, and they are getting better and better these days. There are some great people there.

The interviewees also seemed to be satisfied with the financial subsidies they received from the Hong Kong

government. As Mrs U (89) stated, “The government is good to us seniors. We have a special rate for using public transport, and we receive financial support when seeking medical services.... All of these give me peace of mind.... I don’t have to worry too much about the issue of money when I need to use these basic services.”

Many of the interviewees said that they were particularly delighted and proud to receive financial support from their family. Mrs B (90) shared her gratification with the interviewer:

My daughter is retired now. We have about HKD10,000 (USD1,280) per month for expenses. That’s quite enough. I don’t have to worry.... My grandchildren give me pocket money for leisure use.... I go shopping and have dim sum with it. I feel that I am living a very good life. I’m very satisfied. I have had hardships and bad days when I was young, but it’s all over now. More importantly, I am living well in my old age.

### *COVID-related barriers to well-being*

Living to the oldest-old age as a centenarian or near-centenarian may not be easy. The impacts of the COVID-19 pandemic and other age-related issues could have added challenges to their ability to achieve a happy old age. Such barriers were multi-dimensional in nature, from the deterioration of bodily functions, to financial insecurity, to unexpected life events like the recent impacts of the COVID-19 pandemic. Mrs F (96), who lived alone at the time of her interview, complained that her physical health was deteriorating. In particular, she felt searing pain. “I am sore all over my body. I can hardly pull myself together to go anywhere at all.... There is pain all the time, and all over.... I simply cannot go out without someone to accompany me. I can’t go far, and of course I can’t go fast. I get short of breath when I do. I just can’t....” Mrs O (88), also a loner, described her near-centenarian life as “tough”. She continued, “I have to take more than 10 drugs every day. I have pain all over my body and I need to go for medical follow-ups in different places. I also have trouble sleeping. I can sleep only briefly and need to get up to go to the toilet a few times per night ... and now my eyes get watery too.”

Not every interviewee received financial support from family. Those who were living extended years of life without a pension or other means of support could find their situation worrisome. Some interviewees disclosed their fear of financial insecurity. Mrs F (96) needed to rely on comprehensive social security assistance to meet her daily expenses. She lived an extremely stringent life. “With the limited amount I get from the assistance scheme, I need to be very careful and can only barely afford basic/cheap food. I can’t go and have dim sum anymore.” Mrs F continued, “It is getting so worrisome that I just can’t think it through now. I seem to have no way out.... I can’t even pay my domestic helper, who is leaving soon this

year. She has been here to help me for 4 years, but I can't afford it anymore."

During the interviews, some of the interviewees expressed feeling fearful of being a burden to others. Mrs D (95), who was living with her children at the time of the interview, remarked, "I am now more than 90 years old, you see. I often pray that I will not grow older.... I feel like a burden to others. No, I don't want to be this age.... I don't want to be a burden." Her fear was echoed by other interviewees. Mrs F (96) and Mrs O (88) both expressed the view that they had had it all (had lived long enough) and did not want to "be a useless burden to others," as Mrs F put it.

The impacts of COVID-19-related policies, such as social isolation, affected the well-being of this oldest-old group in a different way. Physically, the interviewees found themselves less mobile than before due to the implementation of preventive measures. Mr A (88) said, "I cannot go out now.... I have no reason to walk around, now that everybody is asked to stay home.... My family members do not like me going out as usual ... yeah, that affects me." Mrs F (96) stated that she used to spend some time walking in the park, but was not allowed to do so due to the pandemic. Mr I (90), Mrs J (87), and Mr V (86) made similar remarks to the effect that with the pandemic's preventive measures, they were now mostly home-bound, missing their daily exercises such as swimming, hiking, and walking. Mr V said, "Instead of our usual exercise, we are now home-bound. My family stresses that I should do so.... All I can do now is to pick up some housework, do laundry, and dust...." Psychologically, the impacts of the COVID-19 pandemic seemed quite disturbing to the interviewees. As Mr J (87) noted, "There is no activity at all. I am, of course, unhappy at having to stay home all day long – it's no different from a prison." The preventive measures of social distancing also meant that many of the day care centers had to be closed. This in turn reduced the number of opportunities that older people had to socialize as they had before the pandemic. Mrs F (96) stated, "I used to go to the center ... they had many activities for us ... but we can't go now as it is closed." Mrs T (88) was quite disappointed as well. She observed, "Now, with the COVID issue, there is no volunteer work (which she used to enjoy a lot) for us...."

## Discussion and Implications

The current study used a qualitative approach to derive information on the dimensions of well-being from the experiences of the oldest-old in the context in which they live. It is meaningful to discuss our findings in light of the WHO's conceptual framework on healthy aging. In our study, it was clear from the themes that emerged that *sustaining functional abilities* was widely experienced and considered by the interviewees to be of fundamental importance to their well-being as they advanced in their oldest-old life. The examples of

functional abilities that they revealed in the study included being able to meet their basic needs in daily living, to go out and about on their own, to give help to others, and to build and maintain relationships with family and friends. These descriptions of subjective well-being appeared comparable to those laid out in the WHO's conceptual framework of healthy aging (WHO, 2020).

The current study revealed that the understanding of well-being among the oldest-old was both complex and elusive. Over the course of the study, various terminologies, including independent mobility, active lifestyle, moderate daily routine, and being complacent emerged in the attempt to capture and describe the concept and experience. For example, in the interviews, well-being in later life was conceptualized as ranging from "*having the capacity to take good care of myself*" (Mrs T) to "*being able to give help to others*" (Mrs B), to "*being able to do things as I wish*" (Mr S), to "*going for dim sum daily*" (Mr N), to "*lifelong learning*" (Mrs O), and to the more psychological aspect of "*staying positive and being complacent*" (Mr A, Mr G, and Mrs O). While the findings from the study seem to echo those from previous studies, that well-being is a person's positive evaluation of his or her life and includes positive emotions, meaning, and engagement (Allen et al., 2007), there appeared to be no monolithic concept or definition of well-being. This serves as a good reminder that there is a paucity of research and social policies concerning the oldest-old population. There can be ignorance of heterogeneity within a group when there is a pressing need to have a good understanding of the substantial diversity of those who survive to an advanced age in the era of aging populations.

The findings from the study indicated that most of the oldest-old interviewees strove to stay active by regularly engaging in simple exercises. The main patterns or types of exercises that they enjoyed were hiking, walking, and stretching exercises in public parks. This observation appeared to concur with existing studies suggesting that physical activity might be an important factor in enabling people to age well (Gopinath et al., 2018), both physically and psychologically. This could alert service providers and policy-makers to make relevant resources available to allow this segment of the population to remain active. While life span and course can be influenced by multiple factors, not all of which can be controlled, the health of older people can be enhanced when they have full access to healthcare and services. Moreover, recent studies have shown that healthy aging is largely determined by the ability to maintain both physical and mental capacity, together known as *intrinsic capacity* (Beard et al., 2021). With a rapidly growing aging population, all societies need to plan and invest adequately and in a timely manner in healthcare services and activity facilities for older people to extend their healthy years and strengthen their intrinsic capacities.

Heid (Heid et al., 2021) and her research team revealed through a web-based questionnaire that COVID-19 challenged older people in eight main domains: social relationships, activity restrictions, psychological, health, financial, global environment, death, and home care. The findings of the current study echoed some of these previously identified challenges that older people faced during the initial months of the COVID-19 pandemic. In particular, the current study found that those in the oldest-old group felt that constraints on social interactions and restrictions on their routine activities had significant impacts on their daily life.

The research team was intrigued by the positive mental outlook exhibited by the group of oldest-old interviewees in this study. Despite substantial losses in many ways (for example, in health and income), they tended to choose to remember past events in generally positive terms. A similar phenomenon was noted earlier by (Hyer & Yeager 2011). In our study, the community-dwelling oldest-old interviewees did not seem to be extremely anxious in the midst of the COVID pandemic; rather, they simply felt disturbed by some of the COVID-related policies that limited their mobility and social gathering opportunities. Many interviewees in our study reported that despite the various pandemic-related restrictions, they could still continue to access groceries and other basic supplies regularly, either by themselves or by relying on other family members. This experience might have helped to maintain their mental health by creating peace of mind and a buffer against uncertainty and stress, to a certain extent. Indeed, this complacent outlook may go some way towards accounting for their ability to adapt to their oldest-old life. The findings of the study revealed that this community-dwelling oldest-old group received support from their families and communities during the pandemic. They had regular direct or remote check-ins with friends, community centers and family. Their feelings of connectedness, echoing the findings of McKinlay et al. (2021), seemed to have protected their mental health against adverse emotional distress in the COVID-19 pandemic.

Environments where people lead their lives are considered particularly important “in shaping what older people with a given level of intrinsic capacity can be and do” (WHO, 2020). The evidence in this study might contribute to the body of knowledge in this aspect. Many of the interviewees had fond perceptions of the community centers in the local districts as places to go to meet friends and have fun, and to receive social services and health information. Another favorite environment for many older interviewees was dim sum restaurants. Going to a dim sum restaurant (or dim sum-ing) early in the morning was part of their daily routine. It was not purely about the food. It was also an atmosphere that they enjoyed and an environment for socializing with others. Hong Kong is a small city, with a total land area of about 1110 square kilometers, of which less than 25% is developed Hong Kong (Kong, 2022). Various small public parks are scattered between clusters of

high-rises, making them relatively accessible to all, including older people. It has been well established that the well-being of older people depends on their ability to adapt to their later life, and that this can be achieved by modifying their social and environmental contexts (Lawton, 1996). The findings of the study are consistent with such a view and should be taken into further consideration by service providers and policy-makers in building age-friendly environments to promote the notion of aging well.

## Limitations and Future Research Direction

Although the findings of this study can help to inform interventional efforts by providing the authentic and first-person perspectives and experiences of the oldest-old, there are some weaknesses in the study. First, there might be a potential selection bias. Our interviewees were recruited purposively through various community centers that provide social services to local older people. By their nature, the interviewees were relatively healthy, had established some social networks at the time of the interview, and were living in the community. That perhaps explained why many of them expressed gratitude for the support they received from the centers, which referred them to the study. As such, their experiences and worldviews might not necessarily mirror those who were experiencing serious health issues and were home-bound and/or isolated. Another shortcoming is that the study drew conclusions from a relatively small sample size with a non-diverse population. The understanding of how well the community-dwelling oldest-old are doing in the midst of the COVID-19 pandemic would be strengthened by replicating this study using a larger sample of participants from more diverse backgrounds.

Further research should focus on examining the various aspects related to longevity and healthy aging, such as education and social policy, as well as those related to nutrition and the biological factors of longevity, with the ultimate goal of improving the well-being of the oldest-old in the future, especially in the context of aging countries and societies.

## Conclusion

This study provides insights into “how well” the community-dwelling oldest-old were doing, particularly during the initial years of the COVID-19 pandemic. The findings of the study indicate that the oldest-old people believed that maintaining functional ability is the key to well-being, in line with the suggestions of the WHO (2020). Furthermore, the findings have advanced our understanding of the lives of the oldest-old and of challenges they have been facing during the COVID-19 pandemic, and should be taken into consideration when initiating interventions to better support this vulnerable group during the still uncertain period of the COVID-19 pandemic.



## Appendix A

### Interview Guide for Semi-structured Interviews with the Community-dwelling Oldest-old

Name of the Interviewee: \_\_\_\_\_ Sex/Age: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

Duration of the Interview: From \_\_\_\_\_ to \_\_\_\_\_

Name of Center: \_\_\_\_\_

Explain the objectives of the study to the interviewees:

1. To explore how well they consider they are living, to extend the investigation into the issue of “WHY”.
2. To give voice to older participants about living the life of a centenarian
3. To examine the participants’ perspectives of a ‘long life’ – what mattered to them then and what matters to them now and in the years to come.
4. How has the COVID-19 situation affected the life of the oldest-old in general?

Guiding questions:

1. Thank you for this opportunity to chat with you about your life. What is your name \_\_\_\_\_? Age \_\_\_\_\_? Hometown \_\_\_\_\_?
2. How do you spend your time on a daily basis?
3. How do you like the way you are living now?
4. How do you like going out and getting around? Can you tell me more about that experience?
5. What does it mean to you to be able (or unable) to move around?
6. Follow-up question: Why is this so?
7. Is there anything you like the best at this stage of your life in terms of daily living?
8. Could you tell me which part you enjoy the most when your family visits/takes you out?
9. Could you describe to me the relations you have with your family? Who in the family do you have the most contact with? How often?
10. Could you tell me what you do when you go out with your friends?
11. In the pandemic, if you were limited to a room for all your daily activities, how would you feel about that?
12. How you think the COVID-19 pandemic has affected you and your well-being thus far?
13. Do you have any advice for me so that I can live a happy life when I get to your age?
14. Is there anything else you wish to add before we end this interview?
15. Briefly recap the collected content to check for accuracy.
16. Thank you so much for your genuine sharing. We learned a lot from your life experiences.

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