

# DOPRINOS INKLUZIVNOG PČELARENJA I KVALITETE ŽIVOTA KOD OSOBA S INVALIDITETOM I OSOBA STARIJE ŽIVOTNE DOBI

## CONTRIBUTION OF INCLUSIVE BEEKEEPING TO THE QUALITY OF LIFE OF PERSONS WITH DISABILITIES AND ELDERLY PEOPLE

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**Sažetak:** Osobe s invaliditetom i osobe starije životne dobi predstavljaju ranjivu populaciju u kojoj mogu biti prisutne različite teškoće u fizičkom, psihičkom i socijalnom funkcioniranju. Zbog toga je, radi njihova osnaživanja, potrebno provoditi različite interdisciplinarnе terapijske i rehabilitacijske programe. U tom se kontekstu, u posljednje vrijeme, sve više razmatra uloga inkluzivnog pčelarenja kao potencijalno značajne aktivnosti koja obuhvaća poticanje različitih psihofizičkih i socijalnih dimenzija u osobe. Međutim, znanstvena su istraživanja u ovom području još uvijek oskudna, što otežava potpuno razumijevanje dobrobiti ovog pristupa te njegovu daljnju prilagodbu i dostupnost. U tom smislu definiran je cilj ovog istraživanja koji se odnosio na dobivanje uvida u doprinose inkluzivnog pčelarenja na različite aspekte kvalitete života osoba s invaliditetom i osoba starije životne dobi te prijedloge za unapređenje ove aktivnosti kod navedenih specifičnih grupa korisnika. U svrhu provedbe istraživanja primijenjena je kvalitativna metodologija uz polustrukturirane intervjue na uzorku od 11 ispitanika u dobi od 38 do 74 godina, s različitim vrstama motoričkih poremećaja i kroničnih bolesti. Rezultati istraživanja ukazuju da inkluzivno pčelarenje može pozitivno doprinijeti kvaliteti života osobama s invaliditetom i osobama starije životne dobi poboljšavajući njihovo fizičko, emocionalno i materijalno blagostanje, kao i međuljudske odnose i samoodređenje. Kako bi se ove prednosti maksimalno iskoristile, važno je osigurati što bolje uvjete za provedbu inkluzivnog pčelarenja kroz različite edukacije, osiguranje pristupačnosti i asistencije, ergonomsku prilagodbu opreme,

**Abstract:** Persons with disabilities and elderly people represent a particularly vulnerable population that may experience various difficulties in their physical, psychological, and social functioning. In order to empower them, it is therefore necessary to implement various interdisciplinary therapeutic and rehabilitation programmes. In this context, the role of inclusive beekeeping has recently been considered as a potentially significant activity that can promote various psychophysical and social dimensions of an individual. However, scientific research in this area is still scarce, making it difficult to fully understand the benefits of this approach and to further adapt and expand its accessibility. The objective of this study was to gain insight into the contributions of inclusive beekeeping to different aspects of the quality of life of persons with disabilities and elderly people, as well as to offer suggestions on how to improve this activity and cater to these specific user groups. Based on a qualitative methodology, semi-structured interviews were conducted using a sample of 11 respondents (aged 38 -74 years) with different types of physical disabilities and chronic illnesses. The findings suggest that inclusive beekeeping may have a positive contribution to the quality of life of persons with disabilities and elderly people by improving their physical, emotional, and material well-being, as well as their interpersonal relationships and self-determination. To maximise these benefits, it is important to ensure optimal conditions for the implementation of inclusive beekeeping through various educational programmes, accessibility and

te financijsku potporu čime bi se dodatno smanjile osobne i socijalne prepreke za uključivanje u ovu aktivnost. Također, nužno je provoditi daljnja istraživanja kako bi se poboljšala prilagodba inkluzivnog pčelarenja u odnosu na specifične potrebe i psihofizičke mogućnosti osoba s invaliditetom i osoba starije životne dobi.

**Ključne riječi:** inkluzivno pčelarenje, kvaliteta života, osobe s invaliditetom, osobe starije životne dobi

## UVOD

Osobe s invaliditetom suočavaju se s različitim psihofizičkim odstupanjima i izazovima na području ostvarenja pozitivnih interpersonalnih odnosa, zapošljavanja i samoostvarenja. Iz perspektive socijalnog modela, invaliditet se javlja kada su osobe s određenim tjelesnim, mentalnim, intelektualnim ili senzoričkim poremećajima te kroničnim bolestima suočene s različitim fizičkim i društvenim preprekama koje sprječavaju njihovo učinkovito sudjelovanje u društvu na ravnopravnoj osnovi s drugima (Mitra, Long-Bellil, Moura, Miles i Kaye, 2022). Navedene okolnosti mogu dovesti do smanjene kvalitete života u populaciji osoba s invaliditetom budući da negativno utječu na mogućnost realizacije osobnih interesa, potreba i želja (Dabov i Berc, 2013). Rezultati većeg broja istraživanja pokazuju da osobe s invaliditetom svoju kvalitetu života ne procjenjuju zadovoljavajućom, pri čemu je ta procjena u pravilu niža kod starijih osoba s invaliditetom u usporedbi s mlađim osobama (Brown, 2021, Parmenter, 2021). Takvi su rezultati su zabrinjavajući budući da ne predstavljaju samo rizične faktore za očuvanje fizičkog i mentalnog zdravlja, već i ističu visoku razinu nezadovoljstva u području samoprocjene vlastitog zdravlja, životnog standarda, bliskih kontakata, produktivnosti, pripadanja zajednici, budućnosti i osjećaja sigurnosti (Benjak i sur. 2022).

Slične posljedice doživljavaju i osobe starije životne dobi. Naime, starenje predstavlja složen i dinamičan te ujedno postupan i progresivan proces koji uključuje različite fiziološke, psihološke i socijalne promjene. Fiziološke promjene odnose se na strukturalno i funkcionalno propadanje organa i organskih sustava, a ogledaju se u pojavi različitih oboljenja, funkcionalnih ograničenja, slabljenju motoričkih sposobnosti i osjetilnih funkcija, uspo-

assistance services, ergonomic adaptation of equipment, and financial support. These conditions would further reduce the personal and social barriers associated with participating in this activity. In addition, further research is needed to better adapt beekeeping to the specific needs and psychophysical capabilities of persons with disabilities and elderly people.

**Keywords:** inclusive beekeeping, quality of life, persons with disabilities, elderly people

## INTRODUCTION

Persons with disabilities face various psychophysical challenges and difficulties in building positive interpersonal relationships, gaining employment, and self-actualisation. From the perspective of the social model, disabilities arise when persons with certain physical, mental, intellectual, or sensory impairments, as well as those with chronic medical conditions, encounter various physical and social barriers that prevent their effective and equal participation in society (Mitra, Long-Bellil, Moura, Miles and Kaye, 2022). These circumstances can lead to a diminished quality of life for persons with disabilities since they negatively impact their ability to fulfil personal interests, needs, and aspirations (Dabov and Berc, 2013). Several studies have suggested that persons with disabilities generally do not assess their quality of life as satisfactory, with older persons with disabilities generally reporting lower life satisfaction compared to younger persons (Brown, 2021, Parmenter, 2021). These findings raise important concerns: they not only represent risk factors for maintaining physical and mental health, but also reveal high levels of dissatisfaction regarding self-perceived health, standard of living, close relationships, productivity, sense of belonging in the community, future prospects, as well as a sense of safety among the population of persons with disabilities (Benjak et al., 2022).

Similar consequences are experienced by elderly people. Namely, aging is a complex, dynamic, gradual, and progressive process that involves various physiological, psychological, and social changes. Physiological changes refer to the structural and functional deterioration of organs and organ systems, which manifests itself in the occurrence of various diseases, functional limitations,

ravanja metabolizma, produženog vremena aktiviranja refleksa i dr. (Plećaš, Živković i Potparević 2009, Cai i sur., 2022, Brajković, Korać i Vučeno-  
vić, 2023). Također, tijekom starenja dolazi i do promjena na razini psihičkog funkcioniranja koje se odnosi na opadanje kratkoročnog pamćenja, brzine kognitivne obrade i radne memorije. Nadalje, kao posljedica uzajamnog djelovanja bioloških promjena te promjena u intenzitetu i kvaliteti socijalnih odnosa (uslijed bolesti, umirovljenja ili gubitka partnera i prijatelja) mogu se javiti sve prisutniji problemi u području psihičkog zdravlja u vidu depresije, anksioznosti, fobija, potištenosti, poremećaja hranjenja, izolacije, osjećaja odbačenosti i beskorisnosti, te straha od boli, bolesti i smrti (Solmi i sur., 2022, McGrath i sur., 2023). Iako je veći broj istraživanja u okviru gerontologije i gerijatrije usmjeren na razmatranje, prevenciju i terapiju negativnih posljedica starenja, suvremeni pristupi sve više naglašavaju pozitivne promjene u funkcioniranju starijih osoba i unaprjeđenje određenih sposobnosti u kontekstu prilagodbe, rasta i razvoja (Despot Lučanin i Lučanin, 2010, Ambrosi-Randić i Tucak Junaković, 2021, Hong i sur. 2022). Tako na primjer pojedine starije osobe uspijevaju razviti bolju sposobnost emocionalne regulacije u povezanosti s odabirom osobno značajnih prioriteta i usmjeravanjem pažnje na pozitivna iskustva. Osim toga, prisutan je mudriji i staloženiji pristup u rješavanju problema, kao i osjećaj osobnog blagostanja uvjetovanog slobodnim vremenom koje može biti ispunjeno druženjem s bliskim ljudima i sudjelovanjem u hobijima i aktivnostima koji su bili zane-  
marieni uslijed obiteljskih i radnih obaveza u mlađoj dobi (Healy, 2004, Galić, Tomasocić i Mrčela, 2013). Prema Pečjaku (2001), na osjećaj osobnog zadovoljstva u starijoj dobi mogu utjecati različiti čimbenici, uključujući kronološku dob, životnu filozofiju, socijalno okruženje te odnos zajednice prema pojedincu. Međutim, u suvremenom društvu starijim je osobama otežano održavanje pozitivne slike o sebi kao i osjećaj samopouzdanja i samopoštovanja. Ova pojava može se pripisati dugotrajnoj prisutnosti negativnih stavova i stereotipa koji ističu nepovoljne karakteristike starije populacije, poput smanjene fizičke i kognitivne sposobnosti, povećane ovisnosti o drugima te sklonosti rigid-

weakened motor abilities and sensory functions, slowed metabolism, prolonged reflex activation time, and so on (Plećaš, Živković, L. and Potparević, 2009; Cai et al., 2022; Brajković, Korać and Vučeno-  
vić, 2023). In addition, aging brings about changes in psychological functioning, including a decrease in short-term memory, cognitive processing speed, and working memory. As a result of the interplay between biological changes and shifts in the intensity and quality of social relationships (due to illness, retirement, or the loss of a partner or friends), mental health problems such as depression, anxiety, phobias, sadness, eating disorders, isolation, feelings of rejection and worthlessness, as well as fears of pain, illness, and death may also become more common (Solmi et al., 2022; McGrath et al., 2023). Although much of the research in gerontology and geriatrics focuses on examining, preventing, and treating the negative effects of aging, modern approaches increasingly emphasise the positive changes in aging and the improvement of certain skills related to adaptation, growth, and development (Despot Lučanin and Lučanin, 2010, Ambrosi-Randić and Tucak Junaković, 2021, Hong et al., 2021). For example, some older persons develop better emotion regulation skills by focusing on their own priorities and directing their attention to positive experiences. Additionally, they often approach problem solving more wisely and calmly, as well as experience a greater sense of well-being, facilitated by the leisure time that allows them to socialise with loved ones and pursue hobbies and activities that were previously neglected due to family and work commitments (Healy, 2004; Galić, Tomasocić and Mrčela, 2013). According to Pečjak (2001), various factors can influence personal satisfaction in old age, including chronological age, philosophy of life, social environment, and the attitude of the community towards the individual. However, in modern society, it is often a challenge for elderly people to maintain a positive self-image, self-confidence, and self-esteem. This phenomenon can be attributed to the persistent presence of negative attitudes and stereotypes that emphasise unfavourable characteristics of the older population, such as diminished physical and cognitive abilities,

nom ponašanju i razmišljanju (Brothers, Kornadt, Nehr Korn-Bailey, Wahl i Diehl, 2021, Vickerstaff i Van der Horst, 2021).

Na temelju navedenog može se zaključiti da su osobe s invaliditetom i osobe starije životne dobi u povećanom riziku da svoju kvalitetu života procijene nezadovoljavajućom, što može dovesti do razvoja nepovoljnih psihofizičkih simptoma i narušavanja mentalnog zdravlja (Grabowska, Antczak, Zwierzchowski i Panek, 2022). Kvaliteta života višedimenzionalan je konstrukt koji se odnosi na percepciju pojedinca o vlastitom položaju u životu u kontekstu kulturnih i vrijednosnih sustava u kojima živi, te u odnosu na osobne ciljeve, očekivanja, standarde i brige (Benjak i sur., 2022). Iako je kvaliteta života širok pojam, njezina procjena trebala bi uzeti u obzir specifičnosti populacije na koju se odnosi. Primjerice, prethodna istraživanja navode osam dimenzija kvalitete života osoba s invaliditetom: emocionalno blagostanje, međuljudski odnosi, materijalno blagostanje, osobni razvoj, tjelesno zdravlje, samoodređenje, socijalna uključenost i prava (Schalock, 1996). To upućuje na zaključak da sama invalidnost ne mora nužno negativno utjecati na kvalitetu života te da je od presudne važnosti sposobnost pojedinca da se nosi sa svakodnevnim životnim izazovima. Tako je, na primjer, prema Viemerö i Krauseu (1998) pri planiranju budućih intervencijskih programa potrebno uzeti u obzir zaposlenje ili smisleno radno angažiranje, kao i socijalnu uključenost u različitim fazama života. Osim toga, potrebno je naglasiti važnost provedbe ciljano usmjerenih obrazovnih i rehabilitacijskih pristupa u svrhu jačanja otpornosti i osobnog potencijala, kako bi se u ovoj populaciji potaknulo postizanje zadovoljavajuće kvalitete života (Kim i sur., 2021a). U tom se smislu, u okviru interdisciplinarnih i holističkih pristupa, sve češće razmatra i primjena inkluzivnog pčelarenja kao komplementarne metode u podržavaju psihofizičkog, socijalnog i materijalnog blagostanja kod različitih ranjivih skupina društva.

### **Inkluzivno pčelarenje**

Pčelarenje je jedna od najstarijih djelatnosti koja i danas, u suvremenom svijetu, ima značajan učinak u području poljoprivrede i gospodarstva. Pčelarenje

increased dependence on others, and a tendency toward rigid behaviours and thinking (Brothers, Kornadt, Nehr Korn-Bailey, Wahl and Diehl, 2021; Vickerstaff and Van der Horst, 2021).

Based on the above, it can be concluded that persons with disabilities and older adults are at an increased risk of perceiving their quality of life as unsatisfactory, which may lead to the development of adverse psychophysical symptoms and a decline in mental health (Grabowska, Antczak, Zwierzchowski, & Panek, 2022). Quality of life is a multidimensional construct that refers to an individual's perception of their position in life within the context of the cultural and value systems that they live in, as well as their personal goals, expectations, standards, and concerns (Benjak et al., 2022). Although quality of life is a broad concept, its assessment should take into account the specific characteristics of the population in question. For instance, previous research has identified eight dimensions of quality of life in persons with disabilities: emotional well-being, interpersonal relationships, material well-being, personal development, physical well-being, self-determination, social inclusion, and rights (Schalock, 1996). This suggests that disability itself does not necessarily impair quality of life; rather, an individual's capacity to cope with everyday life plays a crucial role. According to Viemerö and Krause (1998), leisure time or meaningful vocational activities, as well as social inclusion at various life stages, should be considered when planning future intervention programmes. Furthermore, the implementation of targeted educational and rehabilitative approaches should be emphasised to foster resilience and personal potential, thereby supporting a satisfactory quality of life in this population (Kim et al., 2021a). In this regard, within the framework of interdisciplinary and holistic approaches, inclusive beekeeping is increasingly considered as a complementary method to support the psychophysical, social, and material well-being of various vulnerable groups in society.

### **Inclusive beekeeping**

Beekeeping is among one of the oldest practices that continues to have great importance in

je također izuzetno važno zbog podržavanja brojnosti i zdravlja pčelinih zajednica koje imaju jednu od ključnih uloga u očuvanju ekosustava i bioraznolikosti (Le Conte i Navajas, 2008, Goulson, Nicholls, Botías i Rotheray 2015). Pčelinji proizvodi, uključujući med, vosak, pelud, propolis, matičnu mliječ i pčelinji otrov, imaju široku primjenu u prehrambenoj, farmaceutskoj i kozmetičkoj industriji, te se također upotrebljavaju u okviru apiterapije. Rastući interes za pčelinje proizvode temelji se na spoznajama o njihovim korisnim učincima na zdravlje, što se pripisuje bogatstvu njihovih bioaktivnih tvari poput minerala, vitamina, flavonoida, fenola, terpena i enzima (Vazhacharickal, 2021). Također, pčelarenje predstavlja i jedan od načina ispunjavanja slobodnog vremena te priliku za zapošljavanje i ostvarivanje financijske dobiti.

Imajući u vidu pozitivne aspekte pčelarenja, u posljednje je vrijeme sve prisutnija ideja uvođenja inkluzivnog pčelarenja kao komplementarne metode u populaciji osoba starije životne dobi i osoba s invaliditetom. Rezultati dosadašnjih istraživanja, kao i osobna iskustva pojedinaca, pokazala su da ova vrsta aktivnosti kod navedenih korisnika može imati različite pozitivne učinke, budući da uključuje boravak u prirodi i na svježem zraku, odlazak na edukacije, predavanja te pčelarske sajmove, zajedničke interese te socijalne interakcije s drugim pčelarima, fizičku aktivnost na pčelinjaku, proizvodnju i primjenu pčelinjih proizvoda te ostvarivanje financijskih prihoda (Šarčević, 2017, Martinec, Luketa-Marković, Pinjatela, Dobranović i Šarčević, 2017). U posljednje su se vrijeme, tijekom razvoja inkluzivnog pčelarenja, također promišljale i usvojile različite prilagodbe pčelarskih tehnika i alata kao na primjer AŽ košnice<sup>1</sup>, stolac za odla-

modern agriculture and economy. Moreover, beekeeping plays a crucial role in maintaining the population and health of bee communities, which are essential for preserving ecosystems and biodiversity (La Conte and Navajas, 2008; Goulson, Nicholls, Botías, and Rotheray, 2015). Bee products, including honey, wax, pollen, propolis, royal jelly, and bee venom, are widely used in the food, pharmaceutical, and cosmetics industries, as well as in apitherapy. This growing interest in bee products is due to their recognised health benefits, resulting from their rich composition of bioactive substances such as minerals, vitamins, flavonoids, phenols, terpenes, and enzymes (Vazhacharickal, 2021). Furthermore, beekeeping offers the possibility of recreation, employment, and financial gain.

Considering the positive aspects of beekeeping, the idea of introducing inclusive beekeeping as a complementary method for elderly people and persons with disabilities has gained attention. Previous research and personal experiences have shown that this activity can have various positive effects on persons in these groups. Inclusive beekeeping promotes spending time in nature and fresh air, participation in educational programmes, lectures, and beekeeping fairs, sharing of common interests, social interactions with other beekeepers, physical activity at the apiary, production and use of bee products, as well as income generation (Šarčević, 2017; Martinec, Luketa-Marković, Pinjatela, Dobranović and Šarčević, 2017). As part of the process of developing inclusive beekeeping, various adaptations of beekeeping techniques and tools have been adopted and implemented, such as AZ hives<sup>1</sup>, a storage chair, a frame stand, a

<sup>1</sup> AŽ košnice je razvio poznati slovenski pčelar Anton Žnideršič i koriste se više od 100 godina, a dizajnirane su kako bi pčelarima različite dobi, snage i sposobnosti omogućio maksimalnu udobnost pri radu u pčelinjaku. Jednostavan i fleksibilan AŽ sustav uklanja osobne prepreke pčelarenju jer nije potrebno podizanje, osim vodoravnog izvlačenja pojedinačnih okvira, a njihova visina i karakteristike u potpunosti se mogu projektirati prema potrebama pojedinog pčelara. Ove vrste košnica (koje mogu biti dvo- ili troetažne) primjer su uspješne ergonomske prilagodbe za osobe koje imaju problema s leđima, fizičkim ograničenjima ili poteškoćama u kretanju (AZ Hives North America, 2024).

<sup>1</sup> AZ hives were developed by the famous Slovenian beekeeper Anton Žnideršič and have been used for over 100 years. They are designed to provide maximum comfort to beekeepers of all ages, strengths, and abilities when working in the apiary. The simple and flexible AŽ system removes personal barriers to beekeeping, since no lifting is required, apart from sliding single frames out horizontally. The height and characteristics of the hives can be tailored to the individual needs of beekeepers. This type of hive (which can have 2- or 3-levels) is an example of a successful ergonomic adaptation for persons with back problems, physical disabilities, or mobility difficulties (AZ Hives North America, 2024).

ganje stvari, stalak za odlaganje okvira, skuter s prikolicom, dizalica i dr. (Luketa Marković, 2015).

U cilju promicanja i populariziranja inkluzivnog pčelarenja te usvajanja specifičnih znanja i vještina potrebnih za sudjelovanje u ovoj djelatnosti, provode se različite edukacije u okviru tečajeva, radionica ili inkluzivnih škola. Primjerice, „Pčele za razvoj“ globalna je dobrotvorna organizacija, osnovana 1993. godine u Velikoj Britaniji, koja promiče održivo pčelarstvo i pčelarske vještine u siromašnim zajednicama u različitim dijelovima svijeta kako bi se osigurala ekonomska sigurnost i poboljšali životni uvjeti. U okviru svojeg djelovanja također provode projekt „Ekonomsko osnaživanje osoba s invaliditetom“ s ciljem rušenja barijera uzrokovanih invaliditetom uz pomoć pčelarenja (Bees for Development, 2024). Sličan projekt, „Integracija osoba s invaliditetom uz pomoć pčelarenja“ provodi „Slovenska udruga pčelara“ u kojoj također djeluje sekcija pčelara u invalidskim kolicima. U okviru navedenog projekta publiciran je i „Pčelarski priručnik za osobe s invaliditetom“ (Bozovičar, 2018). Nadalje, vrijedno je istaknuti da je na Sveučilištu u Michiganu u suradnji s različitim udrugama i centrima za rehabilitaciju osmišljena i razrađena pčelarska asistivna tehnologija kako bi se pčelarenje prilagodilo specifičnim mogućnostima i potrebama osoba s invaliditetom (Wolfe i Ingraio, 2024). Naime, različita funkcionalna ograničenja korisnika mogu uzrokovati različite probleme tijekom kretanja na pčelinjaku, rukovanja s košnicama i okvirima, mijenjanja položaja tijela, upotrebe ručnih alata i drugo. Isto tako, kao primjer dobre prakse inkluzivnog pčelarenja, u Hrvatskoj se može navesti „Inkluzivna pčelarska škola“ koja u Zagrebu djeluje od 2015. godine u okviru koje se provode edukacije za osobe s i bez invaliditeta. Ova pčelarska škola predstavlja oblik cjeloživotnog obrazovanja za zanimanje pčelar te se tako ostvaruje mogućnost profesionalne rehabilitacije i zapošljavanje osoba s invaliditetom. Dosadašnji polaznici škole kao dodatnu dobrobit naveli su jačanje pozitivne slike o sebi, povećanje samopouzdanja i smanjenje rizika od socijalne isključenosti (Kezić, Filipi, Dobranović i Martinec, 2019).

scooter with a trailer, a lifting device, and more (Luketa-Marković, 2015).

To promote and popularise inclusive beekeeping, as well as to provide the necessary knowledge and skills to participate in this activity, various educational programmes are offered in the form of courses, workshops, and inclusive schools. For example, “*Bees for Development*” is a global charity organisation, founded in the UK in 1993, that promotes sustainable beekeeping and beekeeping skills in impoverished communities around the world to ensure economic security and improve living conditions. As part of its activities, the organisation also runs the project named “*Breaking Down the Barriers of Disability Through Beekeeping*”, which aims to overcome disability-related issues through beekeeping (Bees for Development, 2024). A similar project, “*Integration of Persons with Disabilities Through Beekeeping*”, is being conducted by the *Slovenian Beekeepers’ Association*, which includes a section for beekeepers in wheelchairs. As part of this initiative, the association has also published the “*Beekeeping Handbook for Persons with Disabilities*” (Bozovičar, 2018). Furthermore, an initiative at Michigan State University, in collaboration with various organisations and rehabilitation centres, has led to the development of beekeeping assistive technology to make beekeeping more accessible to persons with disabilities (Wolfe and Ingraio, 2024). Namely, different functional limitations may pose challenges related to moving around the apiary, handling hives and frames, adjusting body position, and using manual equipment. In Croatia, the “*Inclusive Beekeeping School*”, which has been operating in Zagreb since 2015, is an example of good practice in inclusive beekeeping. This school provides education for persons with and without disabilities and serves as a form of lifelong learning for the beekeeping profession, providing opportunities for professional rehabilitation and employment for persons with disabilities. Several persons who participated in this school have reported additional benefits such as improved self-image, increased self-confidence, and a reduced risk of social exclusion (Kezić, Filipi, Dobranović and Martinec, 2019).

## CILJ ISTRAŽIVANJA I ISTRAŽIVAČKA PITANJA

Iako se u okviru suvremene rehabilitacije pčelarenje uzima kao sve češći komplementarni pristup, znanstvena su istraživanja u ovom području još uvijek oskudna. Nedostatak istraživanja otežava potpuno razumijevanje dobrobiti ovog pristupa te njegovu daljnju prilagodbu i dostupnost.

U tom smislu definiran je cilj ovog istraživanja koji se odnosio na dobivanje uvida u doprinose pčelarenja na različite aspekte kvalitete života osoba s invaliditetom i osoba starije životne dobi te prijedloge za unapređenje ove aktivnosti kod navedenih specifičnih grupa korisnika.

U skladu s postavljenim ciljem istraživanja, oblikovana su sljedeća istraživačka pitanja:

- 1) Kako inkluzivno pčelarenje doprinosi kvaliteti života osoba s invaliditetom i osoba starije životne dobi?
- 2) Koje prijedloge za unapređenje inkluzivnog pčelarenja navode osobe s invaliditetom i osobe starije životne dobi?

## METODE ISTRAŽIVANJA

### Sudionici istraživanja

Sudionici istraživanja izabrani su metodom neprobabilističkog namjernog uzorkovanja kako bi se odabrali sudionici s prethodnim iskustvom vezanim za temu istraživanja (Palinkas i sur., 2015., Miles i Haberman, 1994). Kriteriji za odabir sudionika u istraživanje uključivali su osobe s invaliditetom i osobe starije životne dobi koje imaju prethodno iskustvo u inkluzivnom pčelarstvu. U kvalitativno istraživanje bilo je uključeno 11 sudionika. Većinom, u 81,8% slučajeva, sudionici istraživanja bile su osobe muškog spola. Raspon dobi sudionika istraživanja je od 38 godina do 74 godina starosti. Raspon prethodnog iskustva bavljenja inkluzivnim pčelarenjem kod sudionika je između tri i 30 godina. Svi sudionici imali su neku vrstu invaliditeta, a petero od njih ušlo je u kategoriju mlađe starije dobi (65 - 74 godine). Vrste invaliditeta koje osobe imaju spadaju u kategoriju motoričkih poremećaja i kroničnih bolesti (kao na

## OBJECTIVES AND RESEARCH QUESTIONS

Although beekeeping is increasingly used as a complementary approach in modern rehabilitation, there is little scientific research in this area. The lack of research hinders a comprehensive understanding of the benefits of this approach, as well as its further adaptation and accessibility.

In this context, the objective of this study was to gain insight into the contributions of inclusive beekeeping on different aspects of the quality of life of persons with disabilities and elderly people, as well as to propose improvements to this activity that cater to these specific user groups.

In line with the research objective, the following research questions were formulated:

- 1) How does inclusive beekeeping contribute to the quality of life of persons with disabilities and elderly people?
- 2) What are the suggestions offered by persons with disabilities and elderly people for improving inclusive beekeeping?

## METHODS

### Participants

Research participants were selected using a non-probabilistic purposive sampling method in order to identify participants with previous experience related to the research topic (Palinkas et al., 2015; Miles and Haberman, 1994). The selection criteria for participants included persons with disabilities and elderly people with previous experience in inclusive beekeeping. The qualitative study was carried out on a sample of 11 participants. The majority of participants (81.8%) were male. The age range of the participants was between 38 and 74 years. Their previous experience in inclusive beekeeping varied between 3 and 30 years. All participants had some types of disability, and five of them fell into the category youngest-old (persons between the ages of 65 and 74 years). The types of disabilities among the participants were categorised into motor disorders and chronic diseases (e.g., vasculitis, diabetes

primjer: vaskulitis, dijabetes, miopatija, hipertenzija, Wilmsov tumor, eksplozivne rane gornjeg i donjeg ekstremiteta, oštećenje sluha, spastična diplegija donjih ekstremiteta, kronična mijeloidna leukemija, osteosarkom, reumatoidni artritis).

### Metode prikupljanja podataka

Podaci u ovom kvalitativnom prikupljali su se pomoću polustrukturiranog intervjua kako bi se obuhvatila specifična iskustva i doživljaji sudionika (Adeoye-Olatunde i Olenik, 2021., Milas, 2005). Polustrukturirani intervjui u ovom istraživanju sastojao se od niza otvorenih pitanja koja su skladu s postavljenim ciljem istraživanja. Prije provedbe istraživanja sastavljen je dokument pod nazivom Protokol za provedbu polustrukturiranog intervjua s pitanjima od istraživačkog interesa koja su se odnosila na doprinose inkluzivnog pčelarenja kvaliteti života osoba s invaliditetom i osoba starije životne dobi te prijedlozima za unapređenje ove aktivnosti.

### Provedba istraživanja

Polustrukturirani intervjui provodili su se dijelom uživo, a dijelom u *online* okruženju preko platforme Zoom kako bi se obuhvatili svi sudionici istraživanja neovisno o udaljenosti njihovog mjesta življenja od istraživača. S obzirom na to da je inkluzivno pčelarenje tek u začetcima u Hrvatskoj, bilo je važno obuhvatiti što veći broj sudionika iz različitih regija Hrvatske, koji imaju prethodno iskustvo uključenosti u ovu aktivnost slobodnog vremena. Do sudionika istraživanja došlo se preko udruga koje promoviraju i provode inkluzivno pčelarenje. Od ukupno 11 provedenih intervjua, pet intervjua provedeno je u *online* okruženju putem platforme Zoom. Intervjui su trajali u rasponu između 25 i 45 minuta. Dio sudionika istraživanja zbog svojih zdravstvenih razloga, točnije njih petoro, nije moglo pristupiti intervjuu *online* putem Zoom aplikacije niti doći na provedbu intervjua uživo. S njima je iznimno dogovoreno da, zbog njihove velike motiviranosti za sudjelovanjem, ali i istraživačke namjere da se obuhvati što veći broj osoba s iskustvom inkluzivnog pčelarenja, mogu pisanim putem dati svoje odgovore i poslati ih na e-adresu istraživača.

mellitus, myopathy, hypertension, Wilms' tumour (nephroblastoma), explosive wounds of the upper and lower extremities, hearing impairment, spastic diplegia of the lower extremities, chronic myeloid leukaemia (CML), osteosarcoma, rheumatoid arthritis).

### Data collection methods

For the purpose of data collection in this qualitative study, a semi-structured interview was used in order to capture the specific experiences of the participants (Adeoye-Olatunde i Olenik, 2021., Milas, 2005). In this study, the semi-structured interview consisted of a series of open-ended questions designed in accordance with the research objectives. Prior to conducting the study, a document titled Protocol for Conducting a Semi-Structured Interview was developed. This document contained key research questions that focused on the contributions of inclusive beekeeping to the quality of life of persons with disabilities and the elderly people, as well as suggestions on how to improve this activity.

### Procedure

The semi-structured interviews were conducted partly in person and partly online, via the Zoom platform, in order to include all participants, regardless of their geographical distance from the researcher. Since inclusive beekeeping in Croatia is still in its early stages, it was important to reach as many participants as possible from different regions of the country who had previous experience with this activity. The participants were recruited through associations that promote and implement inclusive beekeeping. Of the 11 interviews conducted, 5 were carried out online via Zoom. The interviews lasted between 25 and 45 minutes. Due to health reasons, five participants were unable to participate in the interviews, either online or in person. Considering their high motivation to participate in the study and the research aim to include as many persons with experience in inclusive beekeeping as possible, an exception was made and they were allowed to submit their answers in written form via email.

Audio snimke intervjuja uživo i snimke razgovora putem aplikacije Zoom, nakon što su razgovori doslovno transkribirani, trajno su uništeni i uklonjeni s računala istraživača. U istraživanju su se poštivala etička načela istraživanja, slijedeći Etički kodeks Odbora za etiku u znanosti i visokom obrazovanju (Odbor za etiku u znanosti i visokom obrazovanju, 2006). Posebno se vodilo računa o anonimnosti i povjerljivosti podataka, dobrovoljnosti sudjelovanja, mogućnosti odustajanja te znanstvenoj čestitosti istraživanja. Sudionicima istraživanja posebno je objašnjena svrha audiosnimanja intervjuja te je jasno istaknuto kako će se audiosnimke upotrebljavati jedino u svrhu transkribiranja razgovora. Zatim, kako transkripti neće sadržavati osobne podatke te kako će snimke biti uništene nakon što se provede postupak transkribiranja. Sudionici su trebali dati suglasnost i za audiosnimanje istraživanja. Sudionicima istraživanja u okviru Suglasnosti za sudjelovanje u istraživanju omogućeno je da, ako žele, navedu svoje e-adrese kako bi im se dostavio sažetak rezultata istraživanja.

### **Kvalitativna analiza podataka**

Vrsta kvalitativne analize koja se upotrebljavala u istraživanju tematska analiza koja je usmjerena na prepoznavanje određenih tema, njihovo organiziranje i objašnjavanje (Braun i Clarke, 2006). Teme proizlaze isključivo iz izjava sudionika istraživanja, te je usmjerenost istraživača u postupku analize odgovoriti na pitanje: „O čemu sudionici istraživanja govore?“ i „Što je bit izrečenoga?“.

Postupak kvalitativne analize podataka sastojao se od nekoliko međusobno povezanih koraka. Prvi korak analize bio je upoznati se s prikupljenim podacima, točnije transkribiranim izjavama sudionika. Nakon prvog koraka slijedilo je otvoreno kodiranje u kojem su se odgovori sudionika istraživanja oblikovali u kodove. To je postupak sažimanja i strukturiranja podataka. Nakon što su podaci kodirani, točnije sažeti, oni se organiziraju u teme i pripadajuće podteme, ovisno o čemu ti podaci govore.

The audio recordings of the face-to-face interviews and Zoom conversations were permanently deleted from the researcher's computer after verbatim transcription. The study complied with the ethical research principles according to the Ethical Code of the Committee on Ethics in Science and Higher Education (Odbor za etiku u znanosti i visokom obrazovanju, 2006). Particular attention was given to the confidentiality of the data, the voluntary nature of participation, the right to withdraw, and scientific integrity. Participants were explicitly informed about the purpose of the audio recording, and it was clearly stated that the recordings would only be used for transcription purposes. They were also assured that the transcripts would not contain any personal data and that all recordings would be destroyed once transcription was complete. The participants provided their consent to the audio recording. On the "Consent to participate in research" form, participants also had the opportunity to provide their email addresses, if they wished to receive a summary of the research findings.

### **Qualitative data analysis**

The type of qualitative analysis used in this study was thematic analysis, with a focus on identifying, organising, and explaining specific themes (Braun and Clarke, 2006). The themes emerged solely from the participants' statements, and the researcher's primary goal during the analysis process was to answer the questions: "What are the participants talking about?" and "What is the essence of what is being said?"

The process of qualitative data analysis consisted of several interrelated steps. The first step was to familiarise oneself with the collected data, especially the transcribed statements of the participants. This was followed by open coding, in which the participants' responses were converted into codes - a process of summarising and structuring the data. Once the data was coded (i.e., condensed), it was organised into themes and corresponding subthemes, depending on what the data pertained to.

## REZULTATI ISTRAŽIVANJA

U nastavku su prikazani rezultati provedene tematske analize oblikovani u teme, podteme i pripadajuće kodove. Rezultati su prikazani tablično nakon čega su objašnjeni uz navođenje izjava (citata) sudionika istraživanja budući da su oni dokaz vjerodostojnosti istraživanja uz provedenu metodu triangulacije. (Ajduković, 2008).

### **Doprinosi inkluzivnog pčelarenja kvaliteti života osoba s invaliditetom i osoba starije životne dobi**

Sudionici istraživanja govore o raznovrsnim dobrobitima inkluzivnog pčelarenja za osobe s invaliditetom i osobe starije životne dobi koje se mogu organizirati u sljedeće teme: fizičko blagostanje, emocionalno blagostanje, samoodređenje, međuljudski odnosi i materijalno blagostanje. U svim spomenutim temama sudionici istraživanja ističu značajne i pozitivne doprinose inkluzivnog pčelarenja. U tablici 1 detaljno su prikazane teme, podteme i pripadajući kodovi.

## RESULTS

The results of the thematic analysis are systematically presented below according to overarching themes, subthemes, and corresponding codes. These results are first presented in tabular form, followed by a detailed interpretation that is supported by verbatim quotes from the study participants, which serve as indicators of the study's credibility. The use of triangulation in research strengthens the methodological rigour and trustworthiness of the analysis (Ajduković, 2008).

### **Contributions of inclusive beekeeping to the quality of life of persons with disabilities and elderly people**

The participants in our study report a variety of benefits associated with inclusive beekeeping for persons with disabilities and elderly people. These benefits can be grouped into the following categories: physical well-being, emotional well-being, self-determination, interpersonal relationships, and material well-being. Across all identified themes, participants consistently emphasised the significant and positive contributions of inclusive beekeeping. Table 1 provides a detailed overview of each theme, the corresponding sub-themes, and their associated codes.

**Tablica 1.** Prikaz rezultata kvalitativne analize o doprinosu inkluzivnog pčelarenja kvaliteti života kod osoba s invaliditetom i osoba starije životne dobi / **Table 1.** Overview of the results of the qualitative analysis on the contributions of inclusive beekeeping to the quality of life of persons with disabilities and elderly people

CONTRIBUTIONS OF INCLUSIVE BEEKEEPING TO THE QUALITY OF LIFE		
THEME	SUB-THEMES	CODES
PHYSICAL WELL-BEING	<ul style="list-style-type: none"> <li>• Contribution to health</li> <li>• Prevention of diseases</li> <li>• Improved quality of sleep</li> <li>• Improved functionality</li> </ul>	<ul style="list-style-type: none"> <li>• Apitherapy as a treatment approach</li> <li>• Medicinal properties of bee products</li> <li>• Strengthening the immune system</li> <li>• Natural skin care</li> <li>• Products contribute to disease prevention</li> <li>• Improved sleep quality through beekeeping activity</li> <li>• Increased strength and endurance</li> <li>• Increased physical activity and mobility</li> <li>• Reduced fatigue</li> <li>• Slower decline in physical functions</li> <li>• Improved coordination</li> <li>• Improved concentration and attention</li> </ul>
EMOTIONAL WELL-BEING	<ul style="list-style-type: none"> <li>• Satisfaction</li> <li>• Relaxation</li> <li>• Comfort</li> <li>• Empowerment</li> </ul>	<ul style="list-style-type: none"> <li>• Feelings of contentment and happiness</li> <li>• Feelings of comfort</li> <li>• Pleasure and deepening</li> <li>• passion for beekeeping</li> <li>• Feelings of serenity and peace</li> <li>• Feelings of relaxation and comfort</li> <li>• Experience of fulfilment and inner strength</li> <li>• Improved ability to deal with life's challenges</li> </ul>
SELF-DETERMINATION	<ul style="list-style-type: none"> <li>• Shift in personal goals and beliefs</li> <li>• Initiative</li> <li>• Connection with nature</li> <li>• Sense of personal contribution and self-worth</li> </ul>	<ul style="list-style-type: none"> <li>• Positive mindset</li> <li>• Increased tolerance and empathy</li> <li>• Feelings associated with a new beginning</li> <li>• Experience of complete renewal</li> <li>• Shift in personal perspective</li> <li>• Motivation to tackle other challenges in life</li> <li>• Development of emotional bonds with other beings in nature</li> <li>• Awareness of the relationship between humans and nature and its consequences</li> <li>• Satisfaction and sense of usefulness from contributing to others</li> <li>• Sense of worth through the production of bee products</li> </ul>
INTERPERSONAL RELATIONSHIP	<ul style="list-style-type: none"> <li>• Community involvement</li> <li>• Social connections and friendships</li> <li>• Collaboration</li> <li>• Social and communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• New acquaintances through association activities</li> <li>• Expanded social network through trade fairs and apitourism</li> <li>• Building new friendships</li> <li>• Creation of new opportunities for collaboration</li> <li>• Improved communication and social skills</li> </ul>
MATERIAL WELL-BEING	<ul style="list-style-type: none"> <li>• Production and sales</li> <li>• Employment</li> </ul>	<ul style="list-style-type: none"> <li>• Production and sale at trade fairs</li> <li>• Production for own use</li> <li>• Beekeeping as a form of self-employment</li> </ul>

Dobrobiti inkluzivnog pčelarenja koje ističu sudionici istraživanja mogu se prepoznati kao doprinosi različitim područjima kvalitete života osoba s invaliditetom i osoba starije životne dobi. Vezano za *fizičko blagostanje* sudionici navode kako inkluzivno pčelarenje doprinosi zdravlju, prevenira bolest i njeguje, doprinosi boljoj kvaliteti spavanja i odmoru te cjelokupnoj funkcionalnosti osobe. Doprinosi zdravlju prepoznaju se kroz izražavanje mišljenja da je apiterapija pristup u liječenju, primjerice *“apiterapija, je dakle metoda, liječenje pčelinjim proizvodima”* te kako su pčelinji proizvodi iznimno djelotvorni i ljekoviti, o čemu govore sljedeće izjave *“pčelinji proizvodi, propolis i med, su mi omogućili brže ozdravljenje kod prehlade i upale grla...”*, *“...brže se opravim jer jako dobro djeluju na moj organizam...”*; *“... propolis djeluje na naše stanice, prepoznaje stanice koje su bolesne bez obzira je li to srce, bubrež, jetra, mozak”*, *“Prepoznajem relativno bolju tjelesnu imunost na razne prehlade i virusna oboljenja.”* Pčelinji proizvodi također doprinose jačanju imunološkog sustava organizama, što je vidljivo iz sljedećih izjava *“imunitet bolji stječete i sve. Mislim, čak postoje i injekcije koje se daju za imunitet na bazi pčelinjeg otrova i toga.”*, *“Propolis se pokazao nama jako dobar jer moj partner ima sarkom, bio je na zračenju i dosta je uzimao propolisa u svemu tome, kao za imunitet, da ga ojača.”* Sudionice istraživanja rabe preparate i u dermokozmetici, jer ističu prednosti prirodne njege kože, kao što su *“pčelinja mast mi pomaže za brže zacjeljivanje ogrebotina i za sprječavanje isušivanja kože i sluznica, kao mast za usne, ... jako učinkovito, a prirodno...”*. Pčelinji proizvodi također djeluju u prevenciji nastanka bolesti primjerice *“uzmi pelud, dobit ćeš puno vitamina. To su bjelančevine”*, *“pojedem tri do pet grama te peludi, ono što sam ja primijetio na sebi, ja nikakvih problema s magnezijem nemam i čuva mi zdravlje...”*, a bavljenje pčelarenjem doprinosi i kvaliteti spavanja i boljem odmoru što se očituje u izjavi *“Bolje spavam kako radim s pčelama, bolje se odmorim...”*. Bavljenje aktivnostima inkluzivnog pčelarenja doprinosi cjelokupnom boljem funkcioniranju osobe i osjećaju dobrobiti, jer sudionici ističu kako dolazi do povećava-

The benefits of inclusive beekeeping, as highlighted by the participants, can be recognised as contributing to several aspects of the quality of life of persons with disabilities and elderly people. In terms of *physical well-being*, participants reported that inclusive beekeeping contributes to overall health, prevents illness, promotes recovery and care, improves sleep quality and recovery, and supports overall physical functioning. The health-related contributions are reflected in the perception of apitherapy as a therapeutic approach, for example, *“Apitherapy is, therefore, a method - treatment through bee products.”*. Another contribution is the belief in the effectiveness and healing power of bee products, as evidenced by the following statements: *“Bee products, propolis, and honey have helped me to recover more quickly from colds and sore throats ...”*; *“I recover faster because they have a very beneficial effect on my body.”*; *“... propolis acts on our cells, it recognises the diseased cells, whether it is the heart, kidneys, liver, or brain...”*; and *“I notice a relatively better physical immunity against colds and viral infections.”*. Bee products are also considered to have an immune-boosting effect, as indicated by the following statements: *“You build up better immunity and everything. I mean, there are even injections based on bee venom for the immune system.”*; and *“Propolis has been very helpful for us because my partner has sarcoma, had radiation and took a lot of propolis during that to boost his immunity.”*. The participants, especially women, also use these products in dermo-cosmetics and emphasise the benefits of such natural skin care, for example, *“Bee ointment helps to heal scratches faster and prevents skin and mucous membranes from drying out, like a lip balm... very effective and natural...”*. In addition, participants believe that bee products are said to play a role in disease prevention, for example, *“Take pollen - you get a lot of vitamins. It’s protein.”*; *“I eat three to five grams of this pollen and I’ve found that I don’t have magnesium problems and it protects my health...”*. It is also reported that beekeeping improves the quality of sleep and rest, which is reflected in the statement *“I sleep better since I work with the bees; I rest more ef-*

nja snage i izdržljivosti na primjer „*ono što je na većoj granici mojih mogućnosti i onda svaki put kada nešto tako napravim to je moja pobjeda.*”, „...*Sve nabrojeno prepoznajem kod sebe... odnosi se na promjene u koordinaciji, pokretljivosti, snazi, izdržljivosti...*“, također do povećanja fizičke aktivnosti i pokretljivosti o čemu govore izjave „*To kretanje po pčelinjaku. Tamo je ovakvo brdo i stalno gore dolje, da tako kažem... puno pomaže ta fizička aktivnost.*“, „*Tako da tu mi je najviše koristilo.*“, „*Kod dijabetesa mi je najveća prednost, ali to kretanje*“, zatim do smanjenja umora „...*malo te fermentirane peludi. Ja to sebi uzmem i kao da se povratim, kao da uzmem nekakvu injekciju.*“, „...*odnosi se na promjene u smanjenju umora.*“, kao i do usporenog opadanja tjelesnih funkcija primjerice „*rad s pčelama i konzumacija pčelinjih proizvoda doprinose sporijem opadanju tjelesnih funkcija*“, poboljšanja koordinacije „...*samim tim već imate nekakvu dobrobit, to što vas tjera da budete smireni, da se bolje koordinirate i kad se prisilite tako ponašati onda i shvatite koliko vam to ponašanje zapravo paše i odgovara.*“ te poboljšanja koncentracije i pažnje „...*mogu se puno bolje koncentrirati i razmišljati...*“, „...*s jedne strane brusite pažnju*“.

Doprinosi inkluzivnog pčelarenja dovode do većeg *emocionalnog blagostanja* te sudionici navode zadovoljstvo, opuštenost, ugodu i osnaženost kroz iskustvo bavljenja ovom aktivnosti. Zadovoljstvo i sreća vidljivi su kroz izjave „*sreća kad vidiš razvoj te zajednice*“, „*Osjećam se zadovoljno... to me ispunjava, znači baš me ispunjava, ja uživam u njima i tako da, ispunjavaju me.*“ kao i osjećaj opuštenosti i ugone iz izjave „*Pa opuštenije, ne mislim na nikakve druge brige...*“, „*osjećam se ugodno, baš jako ugodno...*“; dok su osjećaji uživanja i obuzetosti vidljivi kroz izjave „*nego je baš ono lijepo bit tamo. Kao kad ste na cvjetnoj livadi...*“, „*to je nešto što te obuzme...*“. Sudionici izražavaju i strastvenost prema pčelarenju, primjerice „*To je strast. Pčelarenje je strast.*“ Istaknuli su i emocije smirenosti i spokoja kao što je vidljivo u izjavama „*Pa jedan mir, spokoj. Znači jednostavno to je sasvim drugačiji osjećaj.*“, „...*osjećaj kad je čovjek u prirodi bez ikakvog opterećenja, a ovo kad ste uz pčelice, ono*

*fectively...*“. Engagement in inclusive beekeeping contributes to the overall physical performance and well-being of the individual, as participants report an increase in their strength and stamina, e.g., „*Which is beyond my physical limits - and every time I manage to do something like this, it's a personal victory.*“; „...*Everything I mentioned applies to myself... it relates to changes in coordination, mobility, strength, endurance...*“, as well as an increase in physical activity and mobility - „*Moving around the apiary - it's on a hill, it's sort of always going up and down... that physical activity helps a lot. That's what helped me the most.*“; „*With diabetes, the biggest benefit is actually the exercise.*“, reduced fatigue - „...*a little bit of fermented pollen. I take that and it's like getting back on my feet as if I've had a shot.*“; „...*It relates to changes in reducing fatigue.*“, slower decline in physical functions - „*Working with bees and eating bees products contribute to a slower decline in physical abilities.*“, improved coordination - „*You already benefit from being forced to stay calm, to coordinate yourself better, and once you force yourself to do it, you realize how good this behaviour is for you.*“, and improved concentration and attention - „...*I can concentrate and think much better...*“; „...*you sharpen your attention, for one thing.*“.

The contributions of inclusive beekeeping lead to greater *emotional well-being*, and the participants reported gaining feelings of satisfaction, relaxation, comfort, and empowerment from the experience of engaging in this activity. Satisfaction and happiness is reflected in the following statements - „...*the happiness when you see the development of the bee colony...*“; „*I feel satisfied... it fulfils me, it really fulfils me.*“; „*I enjoy them, and yes, they fulfil me.*“. A sense of calm and comfort are reflected in these statements - „*Well, I feel more relaxed, I don't think about any other worries...*“; „*I feel comfortable, really very comfortable...*“. They also described feelings of joy and immersion - „*It's just so nice to be there. Like being in a meadow of flowers...*“; „*it's something that takes you over completely...*“. Participants expressed their passion for beekeeping, for example „*It's a passion. Beekeeping is a passion.*“. They

zujanje njihovo pa makar nekad i znaju ubosti, ali baš smiruje čovjeka.“ te kako se zbog bavljenja ovom aktivnosti osjećaju ispunjeno i s više unutarnje snage, na primjer „Jednostavno se nađete u nekom drugom svijetu i to je i fizički i psihički, takav preporod...to te ispuni.“. Doprinos vide u promjeni u nošenju sa životnim teškoćama, koje je sada na mnogo kvalitetnijoj razini, primjerice „Korisnost pčelarenja je u tome što to vidim kao najbolju metodu za jačanje tjelesnog i psihičkog zdravlja...“, „... atmosfera, miris, nešto će ti pomoći da kad se vratiš vidiš ono rješenje koje ti je pred očima...“, „...lakše podnošenje životnih teškoća.“, „Od svega, zaboravite na sve brige i nedaće koje u životu imate.“.

Sudionici su istaknuli doprinose inkluzivnog pčelarenja promjenama u *samoodređenju*, a odnose se na promjene osobnih ciljeva i uvjerenja, poduzimanje inicijative, povezivanje s prirodom te na osjećaj vlastitog doprinosa i vrijednosti. Promjene osobnih ciljeva i uvjerenja za sudionike znače izbor pozitivnog načina razmišljanja kao što je vidljivo iz izjave *“Onda uzmem malo meda i mozak se vrati u jednu pozitivu...i onda biraš pozitivu...“*, povećanje tolerancije i empatije na primjer *„Mislim da pčelarenje u naravi čovjeka čini tolerantnijim i suosjećajnijim.“*, doživljaj novog početka i potpunog preporoda *“...krenuti od početka u novi život“*, *„Jednostavno se nađete u nekom drugom svijetu i to je i fizički i psihički, takav preporod.“*, *„...baš sam jako zadovoljan s tim pčelarstvom i neka moja životna filozofija, neki životni planovi su se počeli sve više i više povezivat uz pčelarstvo“*. Također, navode se promjene vlastite perspektive primjerice *„Skroz mi je promijenilo perspektivu.“*, *„...ali jednostavno kroz to pčelarstvo shvatite da možete sve, da su te neke granice jednostavno ograničenja u glavama drugih ljudi i ništa više“*. Posljedično, spomenute promjene osobnih ciljeva i uvjerenja pokreću same osobe i olakšavaju rješavanje drugih životnih problema kao što je vidljivo u izjavama *“...atmosfera, miris, nešto će ti pomoći da kad se vratiš vidiš ono rješenje koje ti je pred očima“*, *„Lakše podnošenje životnih teškoća... i nađeš rješenje... rasterećeno od dnevnih obveza“*. Doprinos povezivanju s prirodom vidljiv je kroz izjave o razvoju emocional-

also emphasised feelings of peace and serenity, expressed in these statements - *“Well, a kind of peace, serenity. It’s just a completely different feeling“*; *“... the feeling of being in nature, without any burden, and when you’re with the bees, that buzzing — even if they sometimes sting — that’s actually very calming...“*. They described how this activity makes them feel fulfilled and invigorated, e.g., *“You just find yourself in a completely different world, and it’s both a physical and psychological renewal... it fills you up.“*. They also believe that one of the benefits is that they can now cope with life’s challenges better - *“The benefit of beekeeping is that I see it as the best way to strengthen physical and mental health.“*; *“...the atmosphere, the smell — something helps you to see the solution that was right in front of you when you come back...“*; *“...easier to cope with life’s difficulties“*; *“You forget all your worries and troubles in life.“*.

The participants emphasised the contribution of inclusive beekeeping to changes in *self-determination* related to changes in personal goals and beliefs, taking initiative, connecting with nature, and a sense of one’s own contribution and value. For the participants, changes in personal goals and beliefs corresponds to choosing a more positive mindset, as expressed in this statement - *“Then I take a little honey, and my mind returns to positivity... and then you choose positivity...“*, an increase in tolerance and empathy - *“I think beekeeping inherently makes a person more tolerant and compassionate.“*, as well as the experience of a new beginning and a complete renewal - *“...you just find yourself in a different world, and it’s both a physical and a psychological rebirth...“*; *“I’m really very happy with this beekeeping, and my life philosophy, my life plans are more and more connected to beekeeping.“*. They also emphasised a shift in personal perspective - *“It’s completely changed my perspective.“*; *“...but through beekeeping you just realise that you can do anything, that some of these boundaries are just boundaries in other people’s minds and nothing more.“*. As a result, these changes in personal goals and beliefs are initiated by the persons themselves and this, in turn, helps them deal with other life chal-

nih odnosa i povezanosti s živim bićima u prirodi kao na primjer “...jedno divno biće, jedan prijatelj koji ti donosi dobro u obliku voska, svjeće, voska za izradu kremica, pčelinjeg otrova.“, „Uz pčele postajemo emotivniji u odnosu na prirodni okoliš...“ te osveštavanju odnosa čovjeka prema prirodi i negativnim posljedicama tog odnosa, što je vidljivo u izjavi „Uz pčele postajemo emotivniji u odnosu na prirodni okoliš i svjesniji čovjekovog utjecaja na isti, osobito negativnog ponašanja i utjecaja klimatskih promjena na prirodu i samog čovjeka.“. Osjećaj vlastitog doprinosa i vrijednosti izražavaju kroz izjave o zadovoljstvu i osjećaju korisnosti zbog doprinosa vlastitog proizvoda drugim ljudima primjerice “...kad mi neko kaže ono tvoje tako je čudesno, tako mi je pomoglo, neplativo ničim...“, “Da ja budem koristan, da budem koristan sebi i društvu, odnosno našoj državi. Taj dio mene cijelo vrijeme nosi i drži.“ te vrijednosti zbog vlastite proizvodnje, na primjer “možeš osjetiti da ste nešto novo, veliko stvorili”.

Sudionici prepoznaju dobrobiti inkluzivnog pčelarenja i za međuljudske odnose koji se odnose na uključenost u zajednicu kroz aktivnosti i događanja, povezivanja i prijateljstva, suradnju te promjene u socijalnim i komunikacijskim vještinama. Kada govore o uključenosti u zajednicu kroz aktivnosti i događanja, ističu nova poznanstva kroz druženja u udrugama, primjerice „Ta predavanja koja se održavaju u vezi pčelarenja, uvijek nekog novog sretnete, nešto novo naučite, družite se s tim ljudima poslije, ako su negdje bliže k vama.“, širenje kruga poznanstva kroz sajmove i apiturizam, što je vidljivo u izjavi “druženje s pčelarima kao i razmjena korisnih iskustava i prenošenja znanja u pčelarenju i prezentaciji pčelarskih proizvoda na sajmovima...”, sklapanje novih prijateljstava, na primjer „I koristi, kak ne bi koristilo... Jako koristi, stjecanje prijatelja i toga.“, ostvarivanje novih prilika za suradnju, što je vidljivo u izjavi “neke nove prilike, recimo tu sam ostvario suradnju s osnovnom školom”) te poboljšanje komunikacijskih i interakcijskih vještina, primjerice “kako sada ja razgovaram ja nisam, u zadnjih, recimo prije tri godine, ni mogao tako povezati riječi i rečenice. Međutim, ja sam dosta uporna osoba, tako da sam to povratio

lenges more easily - “The atmosphere, the smell — something helps you see the solution that’s right in front of you when you come back.”; “...easier to deal with life’s difficulties... and you find a solution... relieved of daily obligations”. The contribution to connectedness with nature is reflected in statements about developing emotional relationships and a sense of connectedness with living beings in nature - “...a wonderful creature, a friend who brings you good things in the form of wax, candles, wax for making creams, bee venom.”; “With the bees we become more emotional about the natural environment...”, and through an increased awareness of the relationship between humans and nature and its negative consequences - “With bees, we become more emotional about the natural environment and aware of humanity’s impact on it, especially negative behaviours and the effects of climate change on nature and humans themselves.”. The feeling of making a personal contribution and being valuable is expressed through statements about satisfaction and the feeling of being useful when one’s products help others - “...when someone tells me: ‘Your product is so wonderful, it has helped me so much, it is priceless...’”; “That I can be useful, for myself and for society, or rather for our country. This part of me is what sustains me and keeps me going on.”, as well as a feeling of appreciation from what they produced on their own - “You can feel that you have created something new, something great.”.

Participants recognised the benefits of inclusive beekeeping for interpersonal relationships, especially in terms of community involvement through activities and events, building connections and friendships, working together, as well as improving social and communication skills. When talking about community involvement through activities and events, they talked about the new acquaintances they make at the gatherings organised by beekeeping associations - “You always meet new people at these beekeeping lectures, learn something new and meet up with these people afterwards, especially if they live nearby.”, how they expand their social circles through fairs and apitourism - “Making contacts with beekeepers, sharing useful experiences and passing on knowl-

apsolutno, a pčelarstvo mi pomaže u tome.“ „... otvorenost za ljude i komunikaciju, ...budeš neka-ko komunikativniji...“.

*Financijska dobrobit* inkluzivnog pčelarenja ostvaruje se kroz proizvodnju i prodaju te zaposlenje osoba, točnije samozapošljavanje. Kada sudionici govore o proizvodnji i prodaji, ističu da se ona odvija u sklopu sajмова, na primjer *“onda ovo što dobijem, ja to koji put i prodam tako da dobijem nazad novac, da mogu proizvesti nove proizvode”*, „...na sajmovima je prodaja...“ te i da proizvode za vlastite potrebe, kao što je navedeno u izjavi *„za amatersko bavljenje pčelarenjem, meni je to puno bolje jer znam kaj upotrebljavam, jedem svoj med, imam svoj propolis, imam svoje proizvode od meda i pčela. Prema tome, nitko mi ne može reći da je to nešto prerađeno, krivo...“*. U konačnici, bavljenje ovom aktivnosti doprinosi i tome što pčelarenje postaje oblik samozapošljavanja, primjerice *“Znači, ono što ja mogu reći da preporučam osobama s invaliditetom, da se, ako nemaju nikakvog, ama baš nikakvog prihoda, sa pčelicama si mogu taj život ostvariti.“*.

### **Prijedlozi za unapređenje inkluzivnog pčelarenja za osobe s invaliditetom i osobe starije životne dobi**

Sudionici istraživanja svojim su odgovorima istaknuli različite prijedloge za unapređenje inkluzivnog pčelarenja temeljenim na osobnom iskustvu. U tablici 2 detaljno su prikazani prijedlozi za unapređenje ove aktivnosti kroz teme, podteme i pripadajuće kodove.

*edge about beekeeping and the presentation of beekeeping products at fairs...”, make new friends - “It’s beneficial - of course it is... It’s very beneficial to make friends and so on.”*), and gain new opportunities for collaboration - *“...new opportunities, for example, I’ve established a collaboration with an elementary school here.”*. They also mentioned improvements in communication and interaction skills - *“The way I speak now - three years ago I couldn’t even put words and sentences together like this. But I’m a stubborn person, so I’ve regained all that, and beekeeping helps me with that.”*; *“... openness to people and communication... you somehow become more communicative...”*.

The *financial benefits* of inclusive beekeeping are derived from production and sales, as well as from employment opportunities, more precisely from self-employment. When the participants talked about production and sales, they pointed out that these mainly take place at fairs - *“Then I sell what I get, sometimes to earn some money again so I can make new products.”*; *“...sales take place at fairs...”*, and that they also produce for their own use - *“For hobby beekeeping, it works much better for me because I know exactly what I use — I eat my own honey, I have my own propolis, my own bees and honey products. So nobody can tell me that it has been processed or tampered with...”*. Ultimately, this activity helps to make beekeeping a form of self-employment - *“So, what I can say is that I recommend it to persons with disabilities - if they have no income at all, they can make a life for themselves with the help of bees.”*.

### **Suggestions for improving inclusive beekeeping for persons with disabilities and elderly people**

Participants involved in the study shared various suggestions for improving inclusive beekeeping based on their personal experiences. Table 2 shows a detailed overview of these suggestions, categorised by themes, subthemes, and corresponding codes.

**Tablica 2.** Prikaz rezultata kvalitativne analize o prijedlozima za unapređenje inkluzivnog pčelarenja za osobe s invaliditetom i osobe starije životne dobi / **Table 2.** Overview of the results of the qualitative analysis on suggestions for improving inclusive beekeeping for persons with disabilities and elderly people

SUGGESTIONS FOR IMPROVING INCLUSIVE BEEKEEPING		
THEMES	SUBTHEMES	CODES
ADAPTATION AND ACCESSIBILITY	<ul style="list-style-type: none"> <li>Ensuring adaptation and accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Need to ensure physical accessibility</li> </ul>
SUPPORT	<ul style="list-style-type: none"> <li>Organising specific forms of support</li> <li>Ensuring financial support</li> </ul>	<ul style="list-style-type: none"> <li>Need to provide personal assistance support</li> <li>Financial resources for activity development and sustainability</li> </ul>
AWARENESS	<ul style="list-style-type: none"> <li>Raising public awareness</li> <li>Promotion through the education system</li> </ul>	<ul style="list-style-type: none"> <li>Introducing the public to examples of up-to-date inclusive beekeeping practice</li> <li>Sharing beekeeping experiences with children and youth</li> </ul>
EDUCATION	<ul style="list-style-type: none"> <li>Implementation of systematic beekeeping training</li> </ul>	<ul style="list-style-type: none"> <li>Need for education on the quality of inclusive beekeeping</li> <li>Additional knowledge and information about inclusive beekeeping</li> </ul>

Kada im je postavljeno pitanje o prijedlozima za poboljšanje inkluzivnog pčelarenja za osobe s invaliditetom i starije osobe, sudionici su se fokusirali na izazove koje su osobno iskusili ili o kojima promišljaju. Ovi identificirani izazovi doveli su izravno do njihovih prijedloga za promjenu ili unaprjeđenje ove aktivnosti. Sudionici su istaknuli važnost osiguranja prilagodbi i pristupačnosti, posebice u smislu fizičke pristupačnosti osobama s invaliditetom: „...pa onda ona i taj naš vrt, onaj dio koji je njoj dostupan koristi...“, „osobe imaju poteškoće s kretanjem, ako nije prilagođen prostor kako će osoba doći tamo i kako će obavljati aktivnosti bez podrške...“, „...ja preporučam za rad starijih osoba i teže pokretnih osoba i osoba koje imaju neke zdravstvene poteškoće upravo tu, Alberti-Žnidaršič košnicu, s kojom se lakše može raditi, može se raditi u sjedećem stavu...“. Što se tiče podrške, sudionici su istaknuli potrebu organiziranja specifičnih oblika potpore, poput osobnih asistenata: „I sad, ako vi niste profesionalni pčelar, a profesionalni pčelari su i oni koji sele, znači za osobe s invaliditetom je to dosta teško osigurati, pogotovo ako su osobe s invaliditetom u kolicima. Oni moraju imati još neku zdravu, pod navodnicima zdravu, osobu...za podršku.“ Naglasili su i potrebu financijske potpore kroz osiguranje sredstava za razvoj novih djelatnosti i njihovu održivost: „...više koštaju, nego ti daju..., to je, e sad tu bi država trebala pomoći dati neka sred-

When asked for suggestions on how to improve inclusive beekeeping for persons with disabilities and elderly people, participants focused on challenges that they had experienced or thought about. These identified challenges led directly to their suggestions for change or improvement. Participants emphasised the importance of ensuring adaptations and accessibility, especially in terms of physical accessibility for persons with disabilities: “So she uses the part of the garden that is accessible to her...”; “People with mobility difficulties — if the space is not adapted, how can they get there and how can they do activities without assistance...”; “I recommend the Alberti-Žnidaršič hive for older adults, people with reduced mobility and people with health problems - it is easier to use and allows you to work while sitting.”. In terms of support, participants emphasised the need to organise specific forms of support such as personal assistants: “If you are not a professional beekeeper - and professionals are usually the ones who move their hives - it is very difficult for people with disabilities, especially wheelchair users, to manage. They need another, so-called ‘able-bodied’ person to help them.”. They also emphasised the need for financial support by providing funds for the development of new activities and their sustainability: “It costs more than it brings in... that’s where the state should help, providing funds so that all this can survive and be developed further.”. In terms

stava da to sve opstane i da možete to još bolje razvijati...“ . U smislu podizanja svijesti javnosti, sudionici su istaknuli važnost isticanja pozitivnih primjera kao što su *“On naprosto nije mogao vjerovati da bih ja uopće mogla nešto raditi...,ali zašto“*, *„Treba primjerima pokazati da se može, ne da se može da je i jako dobro i korisno...“*, *„... treba primjerima pokazati da se može, ne da se može da je i jako dobro i korisno...“*. Posebna pažnja posvećena je promicanju svijesti kroz obrazovni sustav, gdje se djeca mogu senzibilizirati za ove probleme u najranijoj dobi kao na primjer: *“Odlazimo u vrtiće, u škole, na fakultete.“*; *“idemo prema tom programu da se djeca vrate prirodi, klinci su došli na taj pčelinjak, oni su se maltene bojali svega. Onda dok im objasniš onu osnovnu razliku između pčela, kak se moraju ponašati, razlika između solitarnih i medonosnih pčela. To je klincima u toj dobi jako bitno, da vide da se može.“* Naposljetku, sudionici su prepoznali potrebu za sustavnom edukacijom, kako u smislu dodatnih znanja, tako i u smislu bolje informiranosti, primjerice *„Ljudi jednostavno ne razumiju, neke osnove samo znaju, a bolje bi bilo, mislim, kada bi imali više informacija i neka dodatna znanja...“*, ili *„Onaj ko se bavi pčelarenjem mora znati što je sve, što je važno, da bi ono bilo dobro i da se neka kvaliteta postigne,...i da se to sve može jel održati, ima puno toga što je važno, pa bi to netko trebao prenijeti.“*

## RASPRAVA

Doprinosi inkluzivnog pčelarenja kvaliteti života osoba s invaliditetom i osoba starije životne dobi, temeljeni na odgovorima sudionika istraživanja, odnose se na različita područja kvalitete njihova života. Kvaliteta života kompleksan je konstrukt i različiti ga autori na različite načine definiraju. Holistički pristup promatranju i mjerenju kvalitete života uzima u obzir objektivne odrednice kvalitete života i osobna ili subjektivna iskustava pojedinaca o vlastitom životu (Diener i Suh, 1997). Provedeno kvalitativno istraživanje dalo je dublji uvid u odrednice subjektivne kvalitete života kod osoba s invaliditetom i osoba starije životne vezano za inkluzivno pčelarenje kao aktivnosti slobodnog vremena. Subjektivna kva-

of raising public awareness, participants mentioned the importance of highlighting positive examples such as: *“He just couldn't believe that I could do anything at all.... but why not?”*; *“We need to show by example that it is not only possible, but also very good and useful.”*. Particular attention was paid to promoting awareness through the education system, where children can be sensitised to these issues at an early age: *“We go into kindergartens, schools and universities.”*; *“We are working on a programme to bring children back into contact with nature. When they first visited the apiary, they were afraid of everything. But once you explain to them the basic differences between bees, how to behave around them, the difference between solitary bees and honey bees - it's really important for children of that age to see that it's possible.”*. Finally, the participants recognised the need for systematic education, both in terms of additional knowledge and more information: *“People just don't understand it - they only know the basics. It would be better if they had more information and additional knowledge...”*; *“Everyone involved in beekeeping needs to understand what is important - what is important for good results, quality and sustainability... There is a lot to do and someone needs to pass on this knowledge.”*.

## DISCUSSION

The contributions of inclusive beekeeping to the quality of life of persons with disabilities and elderly people, as determined by the study participants' responses, relate to several areas of their overall well-being. Quality of life is a complex construct that has been defined differently by various authors. A holistic approach to examining and measuring quality of life takes both objective indicators and personal or subjective experiences that persons have with their own lives into account (Diener and Suh, 1997). This qualitative study provides a deeper insight into the determinants of subjective quality of life among persons with disabilities and elderly people, particularly in the context of inclusive beekeeping. Subjective quality of life refers to a person's perceived well-being and encompasses their ability to think about and interpret the world around them (Diener, Suh, Lucas and Smith,

liteta života predstavlja subjektivni osjećaj blagostanja, dobrobiti te uključuje i sposobnost promišljanja i doživljavanja svijeta oko sebe (Diener, Suh, Lucas i Smith, 1999, Ryan i Deci, 2000) te daje odgovore na pitanja: „Koje značenje ljudi pridaju određenim događajima u životu?“, „Što je pojedincima važno?“, „Kakvo značenje ima određeno iskustvo ili događaj za njih?“. Dobiveni odgovori mogu se povezati s teorijskim konceptom kvalitete života autora Schalock, Keith i Gomez (2010). Naime, prepoznati doprinosi inkluzivnog pčelarenja koje navode sudionici istraživanja, a uključuju fizičko blagostanje, emocionalno blagostanje, samoodređenje, međuljudske odnose i materijalno blagostanje, u odnosu su s glavnim dimenzijama kvalitete života, a to su: samoodređenje i osobni razvoj, međuljudski odnosi, socijalna inkluzija, ostvarivanje prava, emocionalno, fizičko i materijalno blagostanje.

U ovom kvalitativnom istraživanju sudionici istraživanja prepoznali su doprinos inkluzivnog pčelarenja svojem *fizičkom blagostanju* kroz poboljšanje zdravlja i kvalitete spavanja, cjelokupnog psihofizičkog funkcioniranja, te prevenciju bolesti. Fizička aktivnost, koja je neizostavan dio pčelarenja, povoljno djeluje na očuvanje kardiovaskularnog, respiratornog, imunološkog i lokomotornog sustava (Durstine i sur., 2000). Odnosno, umjerena i redovita tjelesna aktivnost ima pozitivne učinke na motorički status, odnosno na očuvanje mišićne mase, pokretljivoste, ravnotežu, koordinaciju i fleksibilnost (Hübner i Voelcker-Rehage, 2017). To je posebno važno, budući da su to sposobnosti koje pokazuju tendenciju propadanja uslijed starenja ili specifične kliničke slike invaliditeta. Prema Martin (2013), fizička aktivnost nedvojbeno je važnija za osobe s invaliditetom u odnosu na osobe bez invaliditeta iako su prilično neaktivne, kako zbog manjka motivacije, tako i zbog mnogih medicinskih, psiholoških, društvenih i ekoloških prepreka s kojima se suočavaju. U tom kontekstu, dobrobit je pčelarenja kao aktivnosti slobodnog vremena u tome što potiče spontano fizičko kretanje, a usmjerenost na pčele i proizvodnju pčelinih proizvoda ublažava percepciju boli i umora te podržava osjećaj odgovornosti i motivacije (Šarčević, 2017, Fancourt

1999; Ryan and Deci, 2000). It answers questions such as: “What meaning do people attach to certain life events?”, “What is important to them?”, and “What meaning does a particular experience or event have for them?”. The answers obtained in the present study can be related to the theoretical framework of quality of life proposed by Schalock, Keith, Verdugo and Gomez (2010). The benefits of inclusive beekeeping reported by the participants - physical well-being, emotional well-being, self-determination, interpersonal relationships and material well-being - are closely related to the dimensions of quality of life defined by the authors as mentioned above: self-determination and personal development, interpersonal relationships, social inclusion, realisation of rights, as well as emotional, physical, and material well-being.

In the present qualitative study, participants recognised the contribution of inclusive beekeeping to their *physical well-being* by improving health and sleep quality, overall psychophysical functioning, and preventing disease. Physical activity, which is an essential part of beekeeping, has a positive effect on the maintenance of the cardiovascular, respiratory, and immune systems, as well as locomotor functioning (Durstine et al., 2000). Moderate and regular physical activity has a positive effect on motor status, particularly the maintenance of muscle mass, mobility, balance, coordination, and flexibility (Hübner and Voelcker-Rehage, 2017). This is particularly important, since these are the abilities that tend to decline due to aging or specific clinical manifestations of various physical disabilities. According to Martin (2013), physical activity is undoubtedly more important for persons with disabilities than for those without disabilities, although they are often quite inactive - both due to a lack of motivation, as well as due to various medical, psychological, social, and environmental barriers. In this context, the benefit of beekeeping as a recreational activity is that it encourages spontaneous physical activity, while the focus on bees and the production of bee products reduces the perception of pain and fatigue and promotes a sense of responsibility and motivation (Šarčević, 2017; Fancourt, Aughterson, Walker and Step-toe, 2021; Fancourt et al., 2021). The study by Gi-

Aughterson, Walker i Steptoe, 2021, Fancourt i sur., 2021.). Istraživanje Giacobbija, Stancila, Hardina i Bryanta (2008) pokazalo je da fizička aktivnost pozitivno utječe na zdravstveno stanje osoba s invaliditetom, poboljšava njihovo psihološko i socijalno funkcioniranje te potiče osjećaj samoučinkovitosti, osnaženosti i motivacije za daljnje sudjelovanje. Također, prema izjavama sudionika u ovom istraživanju, njihovom fizičkom blagostanju doprinosi i konzumiranje pčelinjih proizvoda koji, prema rezultatima različitih istraživanja, imaju snažan terapijski potencijal zahvaljujući svojim antioksidativnim, protuupalnim, antiapoptotičkim i drugim svojstvima (El-Seedi i sur., 2020, Nainu i sur. 2021).

Sljedeći značajni doprinos pčelarenja, koji je istaknut u ovom istraživanju, odnosi se na *emociionalno blagostanje* potaknuto stanjem zadovoljstva, opuštenosti, ispunjenosti i ugone. Boravak u prirodi i odnos s drugim živim bićima može predstavljati ugodno i sigurno okruženje koje nenametljivo ublažava stres i usmjerava osobu prema prihvaćanju drugih perspektiva u suočavanju s različitim životnim okolnostima. Osjećaj svrhovitosti, strast stvaranja nečeg novog i ljubav prema pčelama, te druženje s ljudima sličnih interesa utječe na pozitivnu percepciju vlastite egzistencije, što se svakako odražava na osjećaj zadovoljstva i prihvatljiviji doživljaj sebe. U tom smislu može se zaključiti da pčelarenje može pomoći u ovladavanju procesa regulacije emocija koji, prema Yadav i Chanana (2018) obuhvaća pokretanje, inhibiciju ili modulaciju emocionalnog stanja ili ponašanja. U osoba starije dobi i u osoba s invaliditetom regulacija emocija važan je čimbenik održavanja mentalnog zdravlja i socijalne prilagodbe. Uz te unutarnje resurse, pčelarenje može potaknuti i upotrebu vanjskih resursa koji se odnose na proaktivne bihevioralne prilagodbe poput pomaganja drugima, traženja podrške i akcije usmjerene na problem. Njihovo zajedničko djelovanje, kako navode Galiana, Tomás, Fernández i Oliver (2020) djeluje na subjektivnu dobrobit, jer mogu osigurati osjećaj sreće i zadovoljstva, te samoostvarenje, smisao i višu razinu osobnog funkcioniranja.

acobbi, Stancil, Hardin and Bryant (2008) showed that physical activity has a positive impact on the health of persons with disabilities: it improves their psychological and social functioning and fosters a sense of self-efficacy, empowerment, and motivation to continue participating in such activities. Additionally, participants in the present study stated that their physical well-being is supported by the consumption of bee products, which, according to various research findings, have strong therapeutic potential due to their antioxidant, anti-inflammatory, anti-apoptotic, and other beneficial ingredients (El-Seedi et al., 2020; Nainu et al., 2021).

The next important contribution of beekeeping highlighted in the present study relates to *emotional well-being*, which is stimulated by feelings of contentment, relaxation, fulfilment, and comfort. Spending time in nature and engaging with other living beings can create a comfortable and safe environment that subtly reduces stress and encourages persons to adopt different perspectives when faced with different life circumstances. The sense of purpose, passion for creating something new, and caring for bees, as well as being with like-minded people can contribute to a more positive perception of one's existence, which in turn promotes a sense of satisfaction and a more accepting self-image. In this sense, it can be concluded that beekeeping can support the development of emotion regulation processes, which according to Yadav and Chanana (2018) include the initiation, inhibition, or modulation of emotional states or behaviours. For elderly people and persons with disabilities, emotion regulation is an important factor in maintaining mental health and social adjustment. In addition to these internal resources, beekeeping may also encourage the use of external resources, such as proactive behavioural strategies including helping others, seeking support, and taking problem-focused actions. Their joint action, as stated by Galiana, Tomás, Fernández and Oliver (2020), affects subjective well-being, since they can provide a sense of happiness and satisfaction, as well as self-realisation, meaning, and a higher level of personal functioning.

Furthermore, the results indicate that inclusive beekeeping contributes to the *self-determination* of elderly people and persons with disabilities. Ac-

Nadalje, iz dobivenih rezultata vidljivo je da inkluzivno pčelarenje doprinosi *samoodređenju* osoba starije dobi i osoba s invaliditetom. Prema Wehmeje i Powers (2007) samoodređenje se odnosi na kombinaciju znanja, vještina i uvjerenja koja omogućuju osobi da se uključi u ciljano usmjereno, samoregulirano i autonomno ponašanje. Biti samoodređen –to jest, djelovati voljno i činiti da se stvari dogode u vlastitom životu – povezano je s višestrukim pozitivnim ishodima, uključujući i poboljšane kvalitete života i životno zadovoljstvo (Nota, Ferrari, Soresi i Wehmeyer, 2007, Ryan i Deci, 2024). Stoga je važno, u cilju poboljšanja kvalitete života, poticati samoodređenje kroz različite programe podrške i intervencija kako bi se osobama s različitim teškoćama olakšalo donošenje vlastitih odluka, samoostvarenje, učinkovito sudjelovanje u društvenoj zajednici te poštivanje vlastitih potreba i interesa (Ryan i Deci, 2000, Wehmeyer, 2020, Vicente i sur. 2020). Inkluzivno pčelarenje može predstavljati jednu od intervencija koja potiče samoodređenje, kako je i potvrđeno u ovom istraživanju. Prema izjavama ispitanika samoodređenje je u njihovom slučaju bilo povezano s iskustvom promjena osobnih ciljeva i uvjerenja, poduzimanjem inicijative, povezivanjem s prirodom i osjećajem vlastitog doprinosa i vrijednosti. Njihova promišljanja da pčelarenje predstavlja novi početak, doživljaj potpunog preporoda, poticaj za rješavanje drugih problema ili promjenu vlastite perspektive primjer su pozitivnog učinka pčelarenja u procesu preuzimanju proaktivnih strategija u procesu suočavanja s različitim aspektima vlastite egzistencije.

Također, iz perspektive osoba s invaliditetom i osoba starije životne dobi, inkluzivno pčelarenje ima važnu ulogu u poboljšanju *međuljudskih odnosa*. Ta procjena potkrijepljena je izjavama sudionika istraživanja prema kojima sudjelovanje u pčelarenju doprinosi uključenosti u zajednicu, povezivanju s drugima i razvoju socijalnih i komunikacijskih vještina. Mogućnost interakcija s drugim ljudima ostvaruje se ne samo na pčelinjaku, već i kroz sudjelovanje na različitim radionicama, predavanjima, projektima, sajmovima, pčelarskim manifestacijama i sl. To su prilike kada se stvaraju nova poznanstva, razmjenjuju iskustva i razvija

cording to Wehmeyer and Powers (2007), self-determination refers to a combination of knowledge, skills, and beliefs that enable a person to engage in purposeful, self-regulated, and autonomous behaviour. Being self-determined, i.e., acting voluntarily and making things happen in one's life, is associated with numerous positive outcomes, including improved quality of life and life satisfaction (Nota, Ferrari, Soresi and Wehmeyer, 2007; Ryan and Deci, 2024). Therefore, to enhance quality of life, it is important to foster self-determination through various support programmes and interventions that help persons with different difficulties to make their own choices, self-actualise, participate effectively in community, and respect their own needs and interests (Ryan and Deci, 2000, Wehmeyer, 2020; Vicente et al., 2020). Inclusive beekeeping may serve as one such intervention that promotes self-determination, as confirmed in the present study. According to the participants' statements, self-determination, in their case, was associated with the experience of changing personal goals and beliefs, taking initiative, connecting with nature, and having a sense of contribution and self-worth. Their reflections on beekeeping as a new beginning, a sense of complete renewal, motivation to solve other problems, or a shift in personal perspective are examples of the positive influence of beekeeping in promoting proactive strategies in coping with different aspects of one's existence.

From the perspective of persons with disabilities and older adults, inclusive beekeeping also plays an important role in improving *interpersonal relationships*. This assessment is supported by participants' statements indicating that participation in beekeeping contributes to community inclusion, connection with others, and the development of social and communication skills. Opportunities to interact with others occur not only at the apiary, but also through participation in various workshops, lectures, projects, fairs, beekeeping events, and similar activities. These are opportunities where new acquaintances are made, experiences are exchanged, and teamwork is developed (Silverstein and Parker, 2002; Trenberth and Dewe, 2002). Other studies also suggest that leisure activities have a positive impact on self-confidence and help reduce the stigma asso-

timska suradnja (Silverstein i Parker, 2002., Trenberth i Dewe, 2002). I druge studije ukazuju kako aktivnosti slobodnog vremena pozitivno utječu na veće samopouzdanje i smanjivanje stigme koja se povezuje s invaliditetom i starenjem (Hammell, 2014, Haim-Litevsky, Komerni i Lipskaya-Velikovsky, 2023). Iako su zadovoljavajući međuljudski odnosi u povezanosti s boljom kvalitetom života, rezultati određenih istraživanja ukazuju da je socijalna integracija osoba s invaliditetom i osoba starije dobi još nepotpuna i manjkava (Tough, Siegrist i Fekete, 2017, van Hees, van den Borne, Menting i Sattoe, 2020). U tom smislu ističe se potreba poboljšanja dostupnosti visokokvalitetnog uključivanja u različite društvene mreže i prilagođene podrške (Petretto, Gaviano, Carrogu i Pili, 2019). Prema rezultatima istraživanja koje su proveli Kim, Kim, Kim, Han i Nguyen (2021b), društvena aktivnost te emocionalna i informacijska potpora značajno su povezane s osjećajem sreće u osoba s invaliditetom. U tom kontekstu pčelarenje može biti prihvatljiv oblik intervencije koji poboljšava intenzitet i kvalitetu međuljudskih odnosa uz prikladnu podršku i prilagodbu individualnim potrebama i mogućnostima.

*Materijalno blagostanje* također je prepoznat doprinos inkluzivnog pčelarenja iz perspektive sudionika istraživanja. Inkluzivno pčelarenje doprinosi pokretanju vlastitih proizvodnih aktivnosti kroz samozapošljavanje i prodaju vlastitih proizvoda kao oblik materijalne dobiti. Dakle, pčelarenje se ne treba uvijek razmatrati kao hobi ili aktivnost slobodnog vremena, budući da za pojedine osobe s invaliditetom i osobe starije životne dobi može omogućiti financijsku neovisnost i društveno korisno djelovanje (Fritz, Yankelevich, Zarubin i Barger 2010, Prodanović i sur, 2024). Strategije kao što su potpomognuto zapošljavanje i poduzetništvo imaju značajnu ulogu u poticanju samoodređenja, samopouzdanja i pozitivne slike o sebi te posredno utječu na poboljšanje kvalitete života. Iz tog je razloga potrebno i ubuduće razmatrati različite modele formalne i neformalne podrške s ciljem ostvarivanja dodatnih prihoda i zadovoljavajuće razine materijalne neovisnosti u osoba s invaliditetom i osoba starije životne dobi

ciated with disability and aging (Hammell, 2014; Haim-Litevsky, Komerni and Lipskaya-Velikovsky, 2023). Although satisfying interpersonal relationships are associated with a better quality of life, research shows that the social integration of persons with disabilities and older adults continues to be incomplete and insufficient (Tough, Siegrist and Fekete, 2017; van Hees, van den Borne, Menting and Sattoe, 2020). In this regard, there is a clear need for improved access to quality integration into various social networks, along with tailored support (Petretto, Gaviano, Carrogu and Pili, 2019). According to a study by Kim, Kim, Kim, Han and Nguyen (2021b), social activities, as well as emotional and informational support are significantly associated with feelings of happiness in persons with disabilities. In this context, beekeeping may be an acceptable form of intervention that improves the intensity and quality of interpersonal relationships, along with appropriate support and adaptation to individual needs and capabilities.

*Material well-being* was also recognised as a contribution of inclusive beekeeping from the perspective of the participants in the present study. Inclusive beekeeping supports the uptake of individual production activities through self-employment and the sale of one's own products as a form of material gain. Therefore, beekeeping should not always be considered only as a hobby or leisure activity, since it can enable financial independence and social engagement for some persons with disabilities and elderly people (Fritz, Yankelevich, Zarubin and Barger, 2010; Prodanović et al., 2024). Strategies such as supported employment and entrepreneurship play a significant role in promoting self-determination, self-confidence, and a positive self-image, thus indirectly contributing to an improved quality of life. For this reason, it is important to continue exploring different models of formal and informal support to generate additional income and achieve a satisfactory level of material independence for persons with disabilities and elderly people (Shogren and Ward, 2018; Buljevac, Liber and Previšić, 2022).

In addition to the above-mentioned benefits of inclusive beekeeping, participants in the present study also highlighted certain objective conditions

(Shogren i Ward, 2018, Buljevac, Liber i Previšić, 2022).

Osim navedenih dobrobiti inkluzivnog pčelarenja, sudionici ovog istraživanja također su istaknuli i neke objektivne uvjete koji bi doprinijeli uspješnijem provođenju inkluzivnog pčelarenja. Neki od njih uključuju ergonomsku prilagodbu opreme, osiguranje pristupačnosti fizičkog okruženja te specifične oblike podrške, od osobne asistencije do financijske potpore. Slične su rezultate dobili Wentz i Ruger (2023) na temelju ankete provedene na uzorku od preko 500 pčelara s različitim vrstama invaliditeta u SAD-u. Na temelju dobivenih rezultata autori istraživanja zaključili su da se ispitanici suočavaju s brojnim preprekama, ali i da su snalažljivi u primjeni različitih prilagodbi alata, opreme i pristupa u pčelarenju. Međutim, potrebno je provoditi daljnje napore usmjerene prema istraživanju, dizajniranju i modificiranju prikladnih prilagodbi koje bi omogućile bolju kvalitetu inkluzivnog pčelarenja. U tom smislu naglašena je i važnost uključivanja visokotehnološki prilagođenih hardvera i softvera, kao što su npr. aplikacije za pametne telefone, digitalna bilježnica, infracrvena kamera, QR kodovi na košnicama, digitalno povećalo i drugo. Nadalje, sudionici ovog istraživanja također su naglasili potrebu provođenja različitih programa senzibiliziranja javnosti o mogućnostima osoba s invaliditetom i starije životne dobi te potrebi njihova aktivnog uključivanja u širu društvenu zajednicu. U Republici Hrvatskoj prava osoba s invaliditetom jamče se ratifikacijom međunarodnih dokumenata, od kojih najveću snagu ima UN-ova Konvencija o pravima osoba s invaliditetom (United Nations, 2006). Aktivnosti slobodnog vremena posebno su opisane u članku 30. Konvencije koji ističe omogućavanje sudjelovanja osoba s invaliditetom na ravnopravnoj osnovi s drugima u rekreativnim, slobodnim i sportskim aktivnostima te razonodi. U tom je smislu dodatno utemeljen argument za daljnje poboljšanje objektivnih uvjeta za provedbu inkluzivnog pčelarenja čime bi se na još većoj razini, još snažnije, pozitivno djelovalo na kvalitetu života i subjektivno blagostanje osoba s invaliditetom i osoba starije životne dobi.

that would contribute to a more successful implementation of inclusive beekeeping. These include ergonomic adaptation of equipment, ensuring accessibility of the physical environment, and providing specific forms of support such as personal assistance and financial support. Similar results were obtained by Wentz and Ruger (2023) using a survey on a sample of more than 500 beekeepers with various types of disabilities in the USA. Based on the results, the authors of the study concluded that respondents faced numerous barriers, but they are also resourceful when it comes to utilising various adaptations of tools, equipment, and approaches in beekeeping. However, further efforts are needed to research, design, and modify appropriate adaptations to enable better quality of inclusive beekeeping. In this context, the importance of using adapted high-tech hardware and software such as smartphone applications, digital notebooks, infrared cameras, QR codes on hives, digital magnifiers, and so on was also emphasised. Furthermore, participants in the present study also pointed out the need to implement various programmes to raise public awareness on the capabilities of persons with disabilities and elderly people, as well as the importance of their active involvement in the community. In the Republic of Croatia, the rights of persons with disabilities are guaranteed by the ratification of international documents, of which the most important is the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006). Leisure activities are specifically addressed in Article 30 of the Convention, emphasising the rights of persons with disabilities to participate in recreational, leisure, and sports activities on an equal basis with others. In this context, there is further justification for improving the objective conditions for the implementation of inclusive beekeeping, which could contribute positively to and have a greater impact on the quality of life and subjective well-being of persons with disabilities and elderly people.

In order to summarise the main findings of our qualitative research study, it is important to emphasise the following:

- satisfaction and subjective well-being related to inclusive beekeeping activities

Kako bi se povezali najznačajniji rezultati iz provedenog kvalitativnog istraživanja, značajno je za istaknuti sljedeće:

- zadovoljstvo i subjektivan osjećaj dobrobiti i blagostanja vezano za aktivnosti inkluzivnog pčelarenja proizlazi iz perspektiva svih sudionika istraživanja,
- aktivnosti pčelarenja značajno doprinose kvaliteti života sudionika istraživanja, ponajprije kroz njihov doživljaj subjektivnog blagostanja,
- osobito je istaknuto kako pčelarenje pozitivno doprinosi fizičkom i emocionalnom blagostanju te samoodređenju,
- stvaranje kvalitetnih međuljudskih odnosa kroz doživljaje povezivanja, pripadanja i uključenosti u zajednicu doprinose implementaciji prava osoba s invaliditetom i osoba starije životne dobi i razvoju holističkog pristupa koji slijedi primjere univerzalnog dizajna,
- proizvodnja i prodaja pčelinjih proizvoda doprinosi materijalnom ili financijskom blagostanju, što osnažuje sudionike, jer im u nekoj mjeri omogućuje neovisnost i samostaljivanje,
- u cilju poboljšanja provedbe, prilagodbe i dostupnosti inkluzivnog pčelarenja potrebno je unaprijediti objektivne uvjete te osigurati različite modele formalne i neformalne podrške.

## ZAKLJUČAK

Rezultati ovog kvalitativnog istraživanja ukazuju da inkluzivno pčelarenje može značajno doprinijeti kvaliteti života osoba s invaliditetom i osobastarije životne dobi. Posebno se ističu pozitivni učinci na fizičko i emocionalno blagostanje, osjećaj samoodređenja, razvoj međuljudskih odnosa te materijalno osnaživanje kroz mogućnosti samozapošljavanja. Inkluzivno pčelarenje također potiče veću socijalnu integraciju, smanjuje osjećaj izolacije i stigmatizacije te omogućuje aktivno sudjelovanje u zajednici. Kako bi se ove dobrobiti u potpunosti ostvarile, prema promišljanjima

emerged from the perspective of all study participants,

- beekeeping activities significantly contributes to the quality of life of research participants, primarily through their experience of subjective well-being,
- it was particularly emphasised that beekeeping positively contributes to physical and emotional well-being and self-determination,
- developing meaningful interpersonal relationships through the experience of connectedness, belonging, and inclusion in the community contributes to the realisation of the rights of elderly people and persons with disabilities, as well as supports a holistic approach guided by the principles of universal design,
- the production and sale of bee products contributes to material and financial well-being, and empowers participants by giving them a higher degree of independence and autonomy,
- to improve the implementation, adaptation, and accessibility of inclusive beekeeping, objective conditions must be improved and the availability of different models of formal and informal support have to be ensured.

## CONCLUSION

The results of this qualitative study indicate that inclusive beekeeping can significantly contribute to the quality of life of persons with disabilities and elderly people. Particularly noteworthy are the positive effects on physical and emotional well-being, a sense of self-determination, the development of interpersonal relationships, and material empowerment through opportunities for self-employment. Inclusive beekeeping also promotes better social integration, reduces feelings of isolation and stigmatisation, and enables active participation in the community. In order to maximise the impact of these benefits, the study participants believe that the objective conditions for carrying out this ac-

sudionika ovog istraživanja, nužno je unaprijediti objektivne uvjete za provedbu ove aktivnosti, uključujući ergonomsku prilagodbu opreme, osiguranje pristupačnosti prostora, stručnu asistenciju, kao i odgovarajuće edukacije i financijsku podršku. Tako bi se ovoj populaciji korisnika dodatno omogućio osobni razvoj i kvalitetnije življenje, kao i podržavanje inkluzivnijeg i pravednijeg društva. Međutim, ovo istraživanje ima nekoliko ograničenja koja je važno uzeti u obzir pri interpretaciji rezultata. Jedno je od njih to što se radi o kvalitativnom istraživanju provedenom na malom broju sudionika, što onemogućuje generalizacije rezultata na širu populaciju. Zatim, sudionici su odabrani iz specifičnog konteksta (npr. sudjelovanje u određenim edukacijama, projektima ili udrugama), što može utjecati na njihovu podložnost pristranosti, osobito u vezi s pozitivnim iskustvima. Iz tog razloga potrebno je provoditi daljnja istraživanja koja bi trebala biti usmjerena na nekoliko ključnih područja. Prvo, preporučuje se provođenje kvantitativnih studija na većim i raznolikim uzorcima kako bi se utvrdila statistička povezanost između uključivanja u pčelarenje i različitih aspekata kvalitete života. Drugo, korisno bi bilo pratiti dugoročne učinke sudjelovanja u inkluzivnom pčelarenju kroz longitudinalne studije. Treće, treba ispitati i potencijalne izazove i rizike koje takav oblik aktivnosti može predstavljati za određene skupine korisnika, uključujući fizičke, organizacijske i sigurnosne aspekte. Nadalje, potrebno je istražiti načine poboljšanja prilagodbe inkluzivnog pčelarenja u odnosu na specifične potrebe i psihofizičke mogućnosti osoba s invaliditetom i osoba starije životne dobi. Također, važno je poticati širu zajednicu te stručnjake iz područja edukacije, rehabilitacije, socijalne skrbi, zdravstva i drugih disciplina prema uključivanju ove aktivnosti u različite terapijske i suportivne programe. Na temelju navedenog stvorile bi se pretpostavke za koncipiranje i provedbu znanstveno utemeljenih modela inkluzivnog pčelarenja koji bi se mogli sustavno primijeniti u praksi, a čime bi se dodatno osnažile osobe s invaliditetom i osobe starije životne dobi te unaprijedila njihova kvaliteta života.

tivity need to be improved. These include the ergonomic adaptation of equipment, improving accessibility, the provision of professional assistance and adequate training, as well as financial support. In this way, this population would be further enabled to pursue personal development and a better quality of life, thus supporting a more inclusive and equitable society. However, this study has several limitations that should be taken into account when interpreting the results. One of these limitations is that it is a qualitative study conducted on a small number of participants, which reduces the generalisability of the findings to the wider population. In addition, participants were selected from a specific context (e.g., participation in specific training programmes, projects, or associations), which may influence susceptibility to bias, particularly in relation to positive experiences. For these reasons, further research is needed and this research must focus on several key areas. First, it is recommended that quantitative studies be conducted on larger and more diverse samples to identify statistical correlations between participation in inclusive beekeeping and various aspects of quality of life. Second, it would be beneficial to monitor the long-term effects of participation in inclusive beekeeping through longitudinal studies. Third, potential challenges and risks associated with this type of activity for specific user groups should be examined, including physical, organisational, and safety-related aspects. Furthermore, it is necessary to explore ways to improve the adaptation of inclusive beekeeping to the specific needs and psychophysical abilities of persons with disabilities and elderly people. It is also crucial to promote broader community involvement and the active engagement of professionals from education, rehabilitation, social care, healthcare, and other disciplines in order to integrate this activity into different intervention and support programmes. Based on the above, the foundations would be laid for the design and implementation of science-based models of inclusive beekeeping that could be systematically applied in practice, thereby further empowering persons with disabilities and elderly people and consequently, improving their quality of life.

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