**Suppl 4. Participants comments**

**Knowledge and perspectives about MASLD**

Most participants (67%) exhibited some level of awareness regarding the cause and severity of MASLD. They were acquainted with the disease term as they had previously received a diagnosis of MASLD and were still experiencing symptoms at the time of the study. The most frequently voiced concern among participants was the potential adverse effects of disease progression on liver health.

*"From the information that I’ve read, studied online, and some that my GP has given me, about the progression of fatty liver disease—the non-alcoholic fatty liver disease—and how it sort of leads to either cancer or, like, the irreversible end stage of the disease.” (40-year-old male)*

*“it’s a big problem, I see it. The liver is a very important organ of the body and it does a lot of work. And, if it becomes congested with all the fat and stuff like that around, it’s not going to work. It is not going to process what it’s going to.” (59-year- old male)*

Furthermore, certain participants expressed concerns regarding the detrimental effects of the disease on their overall health and well-being.

*“I think it is very serious and I am concerned with it because if I don't look after myself, you know, that could be the end for me.” (69-year-old female)*

*“I think it is very serious because I think it impedes on your, definitely on your health, but also on everything that you do every day.” (69-year-old female)*

However, approximately one-third of the participants either lacked awareness or possessed limited knowledge about the disease. The primary reason cited for this lack of awareness was the scarcity of available information regarding the severity of the disease.

*“To be honest, I didn’t even know that I had a fatty liver for a long time, and I certainly didn’t know I could do anything about it. When I sort of had the diagnosis, it was kind of like from the doctor, like my liver markers were high. But it was kind of like, oh well lots of people have that so its normal.” (67-year-old female)*

*“I learned that I have a fatty liver, like three to four years ago, but the doctors just asked me to change my diet, do exercise. However, I did not give much importance to it.” (56-year-old female)*

*“I didn’t really know anything about it until just recently. I knew about cirrhosis of the liver, but I didn’t know anything about fatty liver disease or what it meant or how it arose, and I did have indications on blood test results and things that there might be some fatty liver, but I didn’t know what that meant, except probably there was some fat around my liver, encasing parts of it, which didn’t surprise me because I’m so fat.” (67-year-old male)*

**Knowledge and perspectives about the role of exercise in MASLD treatment**

While most participants recognized the awareness of MASLD and its severity, 56% were unaware of the role of exercise as part of the management strategy for MASLD. Some participants also expressed a lack of available information on this aspect, which would motivate them to seek further knowledge.

*“I had no idea at all. I assumed that there was no treatment. And to know that there is something you can do about it and that you can maybe reverse it, or at least if you don’t reverse it, you can keep it at the same level, is amazing.” (67-year-old female)*

*“I knew nothing about exercise in the treatment of fatty liver until meeting you*

*the other day, really.” (65-year-old female)*

*“I wasn’t informed enough. All I knew about it was what the doctor had told me and he told me a little bit about the study and that signs were looking positive but I wasn’t educated enough to have a feeling on it.” (37-year-old male)*

Although most participants lacked knowledge about the effectiveness of exercise in MASLD treatment, dietary modifications for managing MASLD appeared to be more widely recognized among them. Some participants mentioned their awareness of the importance of diet in managing the disease but were unaware of the role of exercise.

*“I didn't realize that exercise was a treatment option. My understanding was that, my existing understanding of sort of weight loss was predominantly diet based with exercise providing that last 20%.” (41-year-old male)*

*“I didn't realize that exercise was as important as it is. I thought only diet would be beneficial.” (69-year-old female)*

*“So before today and coming to this session, I think I've been hearing about like, yeah, you need to be more active too and you need to look after your diet as well.” (40-year-old male)*

Interestingly, those who were aware of exercise’s potential role in MASLD management also believed that exercise should be complemented with dietary changes to experience the benefits in MASLD.

*“I'm a nurse, so I know the benefits already. And exercise does have a big impact on NAFLD. I think it should be consistent, long-term and measured probably. But not on its own. It needs diet as well.” (69-year-old female)*

*“It seems to be probably the most important tool for managing and probably followed by diet obviously and the two go hand together, hand in glove, but I can see that without one, the management program just wouldn't be anywhere near as effective.” (60-year-old male)*

**Perspectives on the choice of exercises in the questionnaires**

Walking emerged as the top choice of exercise for 57% of the participants as their preferred long-term activity. More than 50% of participants highlighted the ease and portability of walking as their primary reasons, eloquently expressing their preference for this activity.

*“So, we have to start getting to the process of doing some form of exercise. I believe that is important. So, I thought start with the simpler ones first, and the walking is very simple. These are the simplest thing, I can come home from work, I can say, right, grab the dog, let's go for a walk. It's nice and simple. Or I can even do it in the morning, doesn't matter, first thing up, not a problem. So that's easy*

*(59-year-old male)*

*“Walking I think this is something that I can do a lot easier like readily during the day either when I'm in the office working, I can go out for like 15 minutes walk every maybe two hours or so and come back again and also before or after work I can go out especially now, we're getting into summer and the days are longer it helps as well.” (40-year-old male)*

*“I have osteoporosis and twice a year I have a steroidal injection for my bones. And I suffer mostly in my knee joints and I've had x-rays and ultrasounds and scans and*

*my bones are deteriorating. My bone density is not good. My bones are very porous and so yeah, it's manifesting mainly in my knees. And I chose walking because of my walking group and I find that it gives me the least pain.” (72-year-old female)*

*“You can walk anywhere, so it's practical, easy to do. You can do it any time, it's accessible.” (69-year-old female)*

*“So, walking I can do even on my treadmill or on my way to work, going to the mall and just walk. I guess that's the easiest way to exercise.” (56-year-old female)*

Additionally, a couple of participants emphasized the importance of enjoyment in exercise, noting that adherence to an exercise regimen is easier when the activity is enjoyable.

*“And walking outside, like if I had to walk on a machine, then there's no way I'd do that. But walking outside in the fresh air and the sunshine and the birds and the trees and all that, that's fun, its enjoyable. Several other benefits as well.” (67-year-old female)*

*“I really enjoy walking. Yes, I really do. It really is good for me, doing the walking. I get a lot out of it. I always enjoy walking, and if the weather is bad, I utilise the big shopping centers. Yeah, so I walk every single day. I thoroughly enjoy it.” (71-year-old female)*

Resistance training with free weights and eccentric-biased bodyweight resistance exercise were selected as the second choice of exercises by 19% of the participants.

**Reasons for choosing resistance training with free weights**

The primary reason cited for selecting resistance training with free weights was participants’ prior experience with this type of exercise, which proved to be one of the most influential factors.

*“They fit in with the exercise patterns I already know and they suit the condition of my body the way it is now. The reasons why I chose it is just because there's stuff I know, but it's also stuff that I know I can do. And it's better to do something that you can do than to try and do something you can't do. Or not do something that you can't do.” (41-year-old male)*

*“I've tried it once before and I'm familiar with it, just that I just need help in regards to the precise techniques and you showed me.” (45-year-old male)*

Another significant factor in choosing this exercise was its convenience for home use, without the need for elaborate equipment, as succinctly expressed by several female participants.

*“And the free weight exercises, I can do at home too because I'm pretty sure we do have some weights at home that I can use.” (69-year-old female)*

*“I did enjoy doing those exercises. I felt quite comfortable. And also, I like the fact that I got to have no gym equipment in my house, but I could improvise. And I can do that ongoing.” (72-year-old female)*

Additionally, a couple of participants considered this type of exercise as easy to perform due to its relatively low-impact nature.

*“These are the exercises I can do easily and I won't have excuses to not do them. Because if I have to do, say that bicycle thing that you do, resistance or... eccentric bikes. Yeah, I would find it like, since I'm not enjoying it, I don't think I'll do it every day.” (56-year-old female)*

*“Perhaps if I lose a bit of weight, I can start running again, but right now I need low impact stuff. Low impact is just, you know, gym movements, resistance training with free weights, as opposed to high impact cardio stuff.” (41-year-old male)*

**Reasons for Choosing Eccentric-biased Bodyweight Resistance Exercise**

Six participants identified the ease of performing eccentric-biased bodyweight resistance exercises as the primary reason for incorporating them into their daily routine if given a choice.

*“I liked them because they were relatively easy to do. If you're just walking to the kitchen, you can do a few wall push-ups on your way.” (50-year-old female)*

*“There's accessibility, there's ease of doing those exercises, fatigue issues, many, many factors. And you're not going to sweat a lot either, so you don't have to shower afterwards necessarily. I was pleasantly surprised that they weren't overly strenuous. And because I'm so unfit, I find a lot of things quite strenuous, and they seem to be quite manageable, which is good. Riding an electric bike for 15 minutes, that's a big task. Doing one push-up is a tiny task. You get a sense of achievement very, very quickly if you're doing 10 push-ups, which is why I like these set of exercises, because you can do them instantaneously. You don't need a lot of preparation. There's no barrier between you and exercise.” (67-year-old male)*

Not having access to a gym or simply not being enthusiastic about using fancy gym equipment was also a common factor influencing participants’ decision to opt for this type of exercise.

*“I think because I'm not a member of a gym at the moment, I try to stay away from like the resistance machine exercises. The only reason I didn't go for like the lat pull down or the other machine exercises was that I'm not a member of a gym at the moment.” (40-year-old male)*

*“I don't like gym equipment because it reminds me of my embarrassing youth. All the big men in the gym laughing at me because I wasn't lifting heavy enough weights.” (67-year-old male)*

One participant also mentioned about the portability of these exercises, emphasizing that they can be performed anywhere and at any time of the day.

*“I don't like exercise bikes. I don't like exercise that seems to be tedious and you can't get away from an exercise bike. You're trapped in the room with it. Whereas the sort of exercises that just involve moving your body around in a chair, you can do anywhere. If you suddenly think, I better do a couple of push-ups. It doesn't matter which room in the house you're in, you can do them. You don't have to go and get into gym uniform, drive somewhere, have a membership. It just seems so convenient that I like those. Also, you can do them discreetly. You don't have to be macho about them, so I quite like that.” (67-year-old male)*

**Perspectives on eccentric exercise**

In the second questionnaire, 57% of the participants chose eccentric-biased exercise as one of their top 2 ranked exercises. Among them, half had altered their exercise preference to eccentric-biased exercise after receiving information provided to them in the presentation. Seven participants cited the less fatigue-inducing nature of eccentric exercise, couple with its equal or greater benefits, as the primary reason for this change in perspective. (24, 25)

*“And after explaining the coming down the stairs, it's really interesting, I find that really interesting. It's really like unbelievable, magical stuff. I don't have to kill myself going up the stairs.” (49-year-old female)*

*“I was really thunderstruck by your information that going downstairs was better than walking up stairs. I just found that too good to be true, except I now know that it’s true. And I do enjoy the eccentric in for example the push up as going down is easy than going up.” (67-year-old male)*

*“Because I didn't realise, it seems to be hard to going up the stairs and down, but now I realised going down is more beneficial. So, the main advantage you were saying is the less fatigue and more benefits. That's why I will use the stairs now, instead of using the lift to go down. So, a lot of benefits despite of being less fatigued is what I liked about the eccentric exercise.” (71-year-old female)*

*“Based on what you presented in the presentation the difference and that you mentioned that eccentric has more effect based on the studies than the concentric one, I changed my initial choice of concentric bodyweight squats to eccentric version of it.” (40-year-old male)*

Four participants were already aware of the benefits of eccentric contractions, which influenced their choice.

*“It was mostly because, like I said earlier, I've done it previously and I found it quite a good way for me to exercise. I found I got a lot of good health benefits; I don't know if health benefits might be a bit extreme at the time, but I got good exercise benefits from it at the time in terms of making sure that you kind of hold your proper, correct pose longer and it just gives you more stability in the long run and it works your core and your glutes more, from my impression anyway. So, that's why I kind of prefer that type of training. You're taking more time over it, so you're working everything that bit longer, which just ends up building up those muscles, to my limited knowledge.” (37-year-old male)*

*“Eccentric gives you more benefit, that's the bottom line. To me, if you don't do the eccentric, walking's okay, you still have those benefits, but it's not going to give you what eccentric does. By doing those slower moves, that's going to work a lot more for you.” (59-year-old male)*

**Barriers to exercise**

As noted previously, the majority of participants did not attribute a therapeutic status to exercise in the context of MASLD. Not having the time from their busy schedules to exercise regularly was the most commonly expressed barrier by the participants.

*“Time!! So, wake up, get the kids ready, drop them off at school, go to work, come back from work, dinner time, hang out with the kids, put them to bed, then spend some time with the partner. Basically, the only time I used to have was first thing in the morning, like, 5, 6 o'clock in the morning kind of story, but then my partner was going to work at 6 o'clock in the morning, so I had that time between, you know, 5.30 to 7 o'clock, but now she is working a later shift and I'm too noisy in the gym. So now, like, I've had that taken away, I need to find other mechanisms.” (41-year-old male)*

*I think it's about factoring in the time, like making it a priority and factoring it in, rather than having it as an add-on. Like if I leave it as an add-on at the end of the day, then I'm too tired. (67-year-old female)*

*“Sometimes obviously work gets busy so sometimes I have to work extended hours and that sort of stops me from spending time on exercise.” (40-year-old male)*

*“Time, for me, time as I work full-time. Nothing takes precedence. It’s the lack of time.” (49-year-old female)*

Lack of motivation to engage in regular exercise was also cited as one of the common barriers by participants.

*“Just got to get over that. Because you just, once you start falling down, you're just falling a heap. And the less you do, the less you want to do. So, it's just starting out.*

*Lack of motivation to do it.” (65-year-old female)*

*“Motivation. Motivation to, as soon as I'm at home at the end of the day, it's very hard to motivate myself to do proper exercise.” (37-year-old male)*

Some people recognize the importance of regular exercise for maintaining their health and overall well-being. However, physical discomfort and fatigue induced by exercise also serve as significant barriers for some participants. For instance, this 69-year-old female had breathing difficulties, possibly linked to fatigue induced by fatty liver, which hinders her ability to exert herself during exercise and become hot and sweaty, conditions she believes are necessary to derive benefits from her exercise sessions.

*I don't suppose the fatty liver is really the problem as such. It's just the breathing thing that is really causing me to be slack and not push myself to do more. So, exertion, too much fatigue. And I don't like getting hot and sweaty. But if you don't get hot and sweaty, there is no benefit.*

Similarly, this person doesn’t really enjoy exercising, possibly due to a perceived inability to perform the exercises correctly.

*“I don't like exercise in itself, and my physical inability to do a lot of exercises.” (67-year-old male)*

**Motivators to exercise**

Although exercise was not widely favored among the majority of participants, they did express factors that could potentially motivate them to incorporate exercise into their lifestyle. Five participants mentioned a preference for exercises that would yield positive results for them.

*“I think for as long as I can see some results, that would encourage me to do the exercises because that's what I found with myself is if I feel that it wasn't really doing anything, why would I continue doing it? So, results, I guess, result-driven exercises. And also, strength-based, which increase your strength and muscle in particular.” (56-year-old female)*

*“Things like if I could see the benefits, those types of factors. If I could see the benefits, and that would help a lot. Probably exercises that will help me lose weight in the long term.” (69-year-old female)*

*“Again, you're poised on to the results, again, rewards. I look on this as being a very long-term thing, so I'm not looking for... Whereas in the past when I tried to lose weight, I'd be looking for short-term results. Three months seemed like a long-term. I'm looking at this as for the foreseeable future now.” (67-year-old male)*

Four participants highlighted the importance of having correct knowledge about the role of exercise in managing the disease, the optimal exercise modality, and the correct technique for safe execution as key motivating factors.

*“I understand so much more now than what I had no clue. I had no clue really before because no one's ever taken the time to explain it to me. If people knew, their mindset would be so different.” (49-year-old female)*

*“After today, I'm feeling a lot secure about the thought of trying more different sorts of exercises. So yeah, it makes me feel a lot confident and motivated.” (69-year-old female)*

*“I guess what I'd probably like to know is that is there a going too far?*

*I mean, you logically wouldn't think so, but you also don't know if, I guess, if there's*

*too much going on, can that stress out other, like the liver and stuff like that?*

*You know, you sort of see that if you go too hard, you can have your blood pressure spike and then you can faint, right?” (41-year-old male)*

Exercises that are quick and time-efficient were favored by a couple of participants.

*“I think for me, it's something that's quick to do, that even on a busy day, I struggle to come up with an excuse not to do it, which is why I liked the HIIT training on the treadmill. So that's super quick. I can do that in a field.” (37-year-old male)*

*“Something that's not taking too much time and also, it's something that is not too complex, it's not something that you feel like it's added activity to your daily routine. If* *I do like 15 minutes or half an hour of walking every day and I can probably do it a bit more just to make it like an exercise activity. If I have some spare time at*

*home to do some of the bodyweight training, why not?” (40-year-old male)*

One participant emphasized the importance of having support from family plays a critical role in encouraging you to adopt a healthy lifestyle with exercise.

*“I think that having my immediate family appreciate what I'm doing and to support me is really useful. All my family exercises, they all go to the gym, they all swim. They're very health conscious. And my grandchildren go to sporting things as well. And so now I think for a lot of people maybe they wouldn't get that support. I tend to gravitate towards people who want to be outside and want to be healthy of my age group.” (72-year-old female)*