

Supplementary table 1 Involvement activities

	PUBLIC INVOLVEMENT		IMPACT		
Activity	Level of involvement	Study level	Competencies , awareness	Behaviour	Daily life
Co-creation workshop: information about study design, data co-analysis, music and exercise co-selection, and co-writing of articles	Involve, collaborate	Study design	Appreciation, perspective	Shared goals Framework conditions Shared vision Initiatives	Research quality Practical use Meaning Network
Co-preparation of focus groups and interviews		Data collection	Self-efficacy Knowledge about needs	Shared goals Shared vision Co-design initiatives	
Co-recruitment of participants for focus groups and interviews			Motivation	Shared vision Shared goals	
Co-conduct of interviews and focus groups			Self-efficacy Knowledge about needs	Shared goals Shared vision Co-design Initiatives	
Co-development of the exercise programme and co-selection of suitable music	Consult Involve Collaborate Own	Research question Study design Data interpretation	Self-efficacy Appreciation Competencies Motivation Information Perspective Knowledge about needs	Shared goals Shared vision Shared ownership Co-design Initiatives	Reputation Research quality Network Meaning Practical use
Co-development of first drafts (videos) of the exercise programme	Consult Involve Collaborate Own	Research question Data interpretation	Self-efficacy Appreciation Competencies Motivation Knowledge about needs	Shared goals Shared vision Shared ownership Co-design Initiatives	
Co-creation of the exercise programme (dance-part)	Involve Collaborate Own		Self-efficacy Appreciation Competencies Motivation	Shared ownership Co-design Initiatives	
Co-evaluation of the exercise programme	Consult Involve Collaborate	Research question Study design	Information Perspective	Shared goals Shared vision	

		Data collection	Knowledge about competencies Knowledge about needs	Shared ownership Co-design Initiatives	
Co-analysis of data from interviews and focus groups	Inform Consult	Research question Data analysis	Appreciation Motivation Information Perspective Knowledge about needs	Framework conditions Shared goals Shared vision Co-design	Reputation Research quality Practical use
Co-refinement and co-analysis of exercises and music selection	Consult Involve Collaborate Own		Self-efficacy Appreciation Competencies Motivation	Shared goals Shared vision Co-design Initiatives	Reputation Research quality Practical use Network
Active involvement in video production: video recording of the dance part; conducting interviews to guide the exercise performance and provide information on safety aspects; supporting the organisation	Consult Involve Collaborate Own	Research question Study design Data interpretation	Self-efficacy Appreciation Competencies Motivation Information Perspective Knowledge about needs	Framework conditions Shared goals Shared vision Shared ownership Co-design Initiatives	Visibility Reputation Research quality Network Meaning Practical use
Co-creation of posters for scientific conferences	Inform Consult Involve	Study design Data analysis Data interpretation Dissemination of results	Self-efficacy Appreciation Motivation Information	Shared goals Shared vision Co-design Initiatives	Visibility Reputation Research quality Network Meaning Practical use
Co-presentation of scientific posters at events (World-MS-day, OIS-Zam Meeting)	Consult Involve Collaborate Own	Data interpretation Dissemination of results	Self-efficacy Appreciation Competencies Motivation Information Perspective Knowledge about Competencies		

			Knowledge about needs		
Co-organising closing events including the co-creation of flyers, posters, or presentation, and co-presentation at the events	Inform Consult Involve Collaborate Own	Study design Data Interpretation Dissemination of results	Motivation Information Perspective Knowledge about needs Self-efficacy		
Co-writing articles for MS patient magazine 'Neue Horizonte'	Collaborate Own	Study design Dissemination of results	Self-efficacy Appreciation Competencies Motivation Information Perspective Knowledge about competencies Knowledge about needs	Shared goals Shared vision Shared ownership Co-design Initiatives	
Participating in focus groups/interviews	Inform Consult	Research question Study design Data collection	Self-efficacy Appreciation Competencies Motivation Information Perspective Knowledge about needs	Shared goals Shared vision	Research quality Network Meaning Practical use
Giving interviews for MS magazines, social media, and radio	Involve Collaborate Own	Dissemination of results	Appreciation Motivation Information Knowledge about needs	Shared goals Shared vision Shared ownership Co-design Initiatives	Visibility Network Meaning Practical use