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Exploring two subdimensions of participation, involvement and engagement: A scoping review

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ABSTRACT

Background: The conceptualisation of participation is an ongoing discussion with importance for measurement purposes. The aim of this study was to explore the two subjective subdimensions of participation, *involvement* and *engagement*. The purpose was related to measure development within the field of paediatric rehabilitation.

Methods: In a scoping review, following the PRISMA-ScR, the databases *MEDLINE*, *PubMed*, *Academic Research Complete*, *PsychINFO*, and *Business Source Complete* were searched for publications that described engagement and/or involvement constructs.

Results: Thirty-nine publications met the inclusion criteria. *Involvement* could be conceptualised as an unobservable state of motivation, arousal, or interest towards a specific activity or product. Building a consensus over different fields of research, *engagement* can be seen as the individual's behavioural, cognitive and affective investment during role performance.

Conclusions: This scoping review points in a direction that the two subdimensions of participation need to be separated, with involvement being a more stable internal state of interest towards an activity, and engagement referring to the specific behaviour, emotions, and thoughts meanwhile participating in a specific setting. Clear definition of concepts will enhance the development of measures to evaluate rehabilitation interventions in the field of occupational therapy and related fields.

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Introduction

Optimising participation is one of the main goals in modern healthcare and rehabilitation, particularly for children and adolescents with disabilities [1–6]. Participation is described as a primary outcome in paediatric rehabilitation [7], but it lacks a clear and overall accepted definition. For example, involvement and engagement are subjective subdimensions of participation that are often used interchangeably and thus far have often been neglected in measuring participation [8]. For measuring purposes clear definitions are needed. In paediatric rehabilitation, it is considered preferable to apply self-reporting when measuring children's participation, as child-reported measures support person-centred and value-based care in line with international conventions on the rights of children and persons with disabilities [9,10]. Adair et al. [8] argue that, to measure subjective or internal aspects of participation, it is important to have the individual as a

direct informant. Thus far, self-reported instruments that include the individual aspects of participation are rare and, and thus limiting the evaluation, especially of the subjective perspectives of participation [8]. When measuring participation, concepts and constructs need to be clearly defined. The aim of this study was to explore the two subjective subdimensions of participation, involvement and engagement. The purpose was to identify definitions of the two constructs to be used in measure development, regarding activity participation in children and youth with disabilities.

Following the Oxford dictionary [11] participation is defined as '*the action of taking part in something*'. Involvement is defined as '*the fact or condition of being involved with or participating in something*'. Engagement is defined as '*an arrangement to do something or go somewhere at a fixed time*' in the context of the activity.

In the World Health Organisation (WHO)'s 'International Classification of Functioning, Disability,

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and Health' (ICF) – the conceptual foundation of healthcare and rehabilitation practice – participation is defined as '*involvement in life situations*'. The WHO does not give a clear definition of the term, besides one single footnote "*“involvement” incorporates taking part, being included or engaged in an area of life, being accepted, or having access to needed resources*" [12,p.13]. The ICF has been criticised for its lack of conceptual clarity and for not including the individual's perspectives on their participation [1,13–15]. Moreover, the conceptual issues contribute to difficulty in trying to measure participation. Both activity and participation are represented as covering the same nine life areas in ICF, representing aspects of functioning from an individual (activity) and societal (participation) perspective [16]. The distinction between the participation and activity dimensions in the ICF is complex, but it is argued that participation is more determined by environmental and cultural factors, whereas activity tends to be more distinct and limited by body impairments [16–18]. Granlund et al. [19] argue that environmental factors in the ICF are mainly based on the social model of disability, with society shaping the physical environment and civil rights but lacking the subjective experience.

There are multiple other models of participation. In the context of participation for children and youth with disabilities, the '*Family of Participation Related Constructs*' model (fPRC-model) [7] is a more recently developed framework that derived from literature on health, disability, psychology, and education. In the fPRC-model participation is defined as attendance and involvement [7]. The fPRC-model defines involvement as '*the experience of participation while attending, that may include elements of engagement, motivation, persistence, social connection, and affect*' [7,p.18], and engagement as '*a unifying construct across ecological levels. Thus, it can be defined depending on the ecological level in which it is examined: (1) the person level – the internal state of individuals' involving focus or effort; (2) between systems level – an active involvement in interactions between systems; (3) at the macro level – active involvement in a democratic society*' [7,p.20].

Neither the ICF nor the fPRC-model clearly distinguish between, or unify, the two subdimensions. As Granlund et al. discuss [19], the ICF could benefit from another subjective qualifier of participation, since the qualifiers of performance and capacity cannot capture the subjective experience of participation. Furthermore, no consensus can be found between the Oxford dictionary, the ICF, and the fPRC-model.

Thus, it remains unclear whether both terms are identical or whether there are distinctions to be made.

Clear definitions are a necessity when measuring participation and the subdimensions, involvement and/or engagement [20–24]. Therefore, an enhanced understanding of both subconstructs is required; to attain this understanding. As research on the subjective subdimensions of participation is scarce, occupational therapists and related healthcare professions may benefit from looking into other and related fields of research for definitions.

The aim of this study was to explore the two subjective subdimensions of the participation construct. The research questions were: (i) What definitions of engagement and involvement – applicable for measure development – can be found within different fields of research? (ii) Can the subdimensions of participation, involvement and engagement, be used interchangeably or do they need to be differentiated?

Method

A scoping review method was chosen to broadly explore the conceptualisation of involvement and engagement. This method – a type of knowledge synthesis – aims to start a research process, discover knowledge gaps to be developed in future research [25,26]. The research process followed the PRISMA-ScR guidelines [27]. The main database search took place during May/June 2018, and an update search followed in October 2020. The purpose was to cover fields in which engagement and involvement already have been defined and included in measures. These definitions might be transfereable into healthcare and rehabilitation. Several databases were included in the search process: *MEDLINE*, *PubMed*, *Academic Research Complete*, *PsychINFO*, and *Business Source Complete*. These databases were chosen through a discussion with researchers experienced in structured literature reviews in different databases and fields of research. The search was based on preparatory literature search of the terms '*involvement construct*' and '*engagement construct*' using *Google Scholar*. The search showed that research on involvement was quite pronounced in the fields of consumer and leisure research. Since it was important to get an increased knowledge of the constructs, these fields were added representing by the databases *Academic Research Complete*, *PsychINFO* (leisure research) and *Business Source Complete* (consumer research). For engagement, the research seemed to be most distinctive in economics and management, as well as in educational

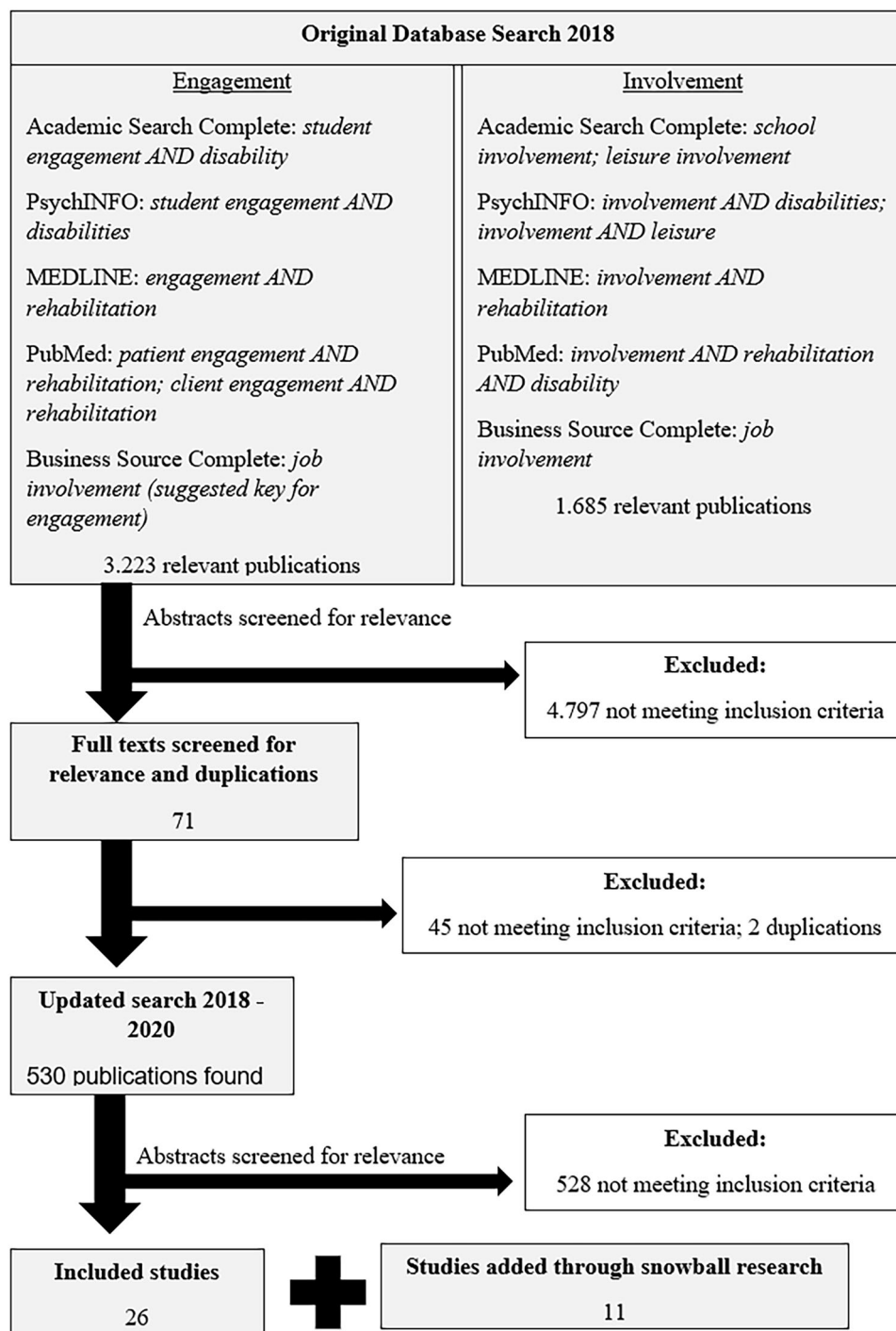


Figure 1. Flowchart of the search process.

psychology covered by the databases; *Business Source Complete (economics)*, *PsychINFO* and *Academic Research complete (educational psychology)*. Since the purpose of the study was to gain an understanding of these constructs for application in the field of health-care and rehabilitation, medical databases *MEDLINE* and *PubMed*, were added to the research process as well.

Figure 1 and Table 1 give an overview of the process of the literature search. Inclusion criteria for publications were: published in English; peer-reviewed; publication defines the ‘involvement’ and/or ‘engagement’ construct; type of publication: theoretical/conceptual article, or instrument development, or review. The inclusion criteria ‘published in English’ and ‘peer-reviewed’ were applied as filters in the

Table 1. Detailed overview of database search.

Search-term/key words	Databases	Results	Used filter	Results with filter	Relevant abstracts	Relevant fulltext
Patient engagement	PubMed	51,011	Keywords added			
Patient engagement AND rehabilitation	PubMed	7665	Child 0–18 years	1054	19	2
Updated search 2018–2020	PubMed	29	Child 0–18 years	–	–	–
Client engagement	PubMed	9153	Index words added			
Client engagement AND rehabilitation	PubMed	1196		1196	11	5
Updated search 2018–2020	PubMed	–		–	–	–
Engagement	MEDLINE	4386	Index words added			
Engagement AND Rehabilitation	MEDLINE	11		–	2	1
Updated search 2018–2020	MEDLINE	18		–	1	1
Student engagement	Academic Search Complete	2443	Index words added			
Student engagement AND disability	Academic Search Complete	53		–	3	2
Updated search 2018–2020	Academic Search Complete	12		–	–	–
Student engagement	PsychINFO	3124	Index words added			
Student engagement AND disabilities	PsychINFO	54		–	2	2
Updated search 2018–2020	PsychINFO	11		–	1	–
Job involvement (suggested as key word for engagement)	Business Source Complete	855		–	16	7
Updated search 2018–2020	Business Source Complete	17		–	–	–
School	Academic Search Complete	238		–	2	1
Involvement						(Transferred to engagement)
Updated search 2018–2020	Academic Search Complete	89		–	–	–
Leisure involvement	Academic Search Complete	716		–	9	4
Updated search 2018–2020	Academic Search Complete	121		–	1	1
Involvement	PsychINFO	11,820	Index words added			
Involvement AND disabilities	PsychINFO	213		–	3	0
Updated search 2018–2020	PsychINFO	34		–	–	–
Involvement AND leisure	PsychINFO	160		–	4	2
Updated search 2018–2020	PsychINFO	18		–	–	–
Involvement	MEDLINE	333,843	Index words added			
Involvement AND rehabilitation	MEDLINE	117		–	–	–
Updated search 2018–2020	MEDLINE	7		–	–	–
Involvement	PubMed	373,987	Index words added			
Involvement AND rehabilitation	PubMed	7491	Index words added			
Involvement AND rehabilitation AND disability	PubMed	1881	Index words added			
Updated search 2018–2020	PubMed	174		–	–	–
Duplications of fulltexts from database researches						–2
Total number of studies included from database researches						26
Publications added through snowball research						
Engagement						7
Involvement						4
Total number of studies included from snowball research						11
Total number of studies included						37

initial search in each database. Using only the index words ‘involvement’ or ‘engagement’, the literature search would be too broad and results would not have been manageable in the frame of this scoping review.

In order to narrow the literature search, additional index words were added. These were based on keywords used by publications found in the initial search on Google-Scholar and the indexed subject headings or controlled terms from a thesaurus/register of each individual database. Since the purpose of the scoping review was related to the field of disability and rehabilitation, the index word ‘rehabilitation’ was added when searching medical databases (MEDLINE and PubMed). For databases within social sciences, the indexed word ‘disability’ or ‘disabilities’ (depending on the index word register of each database) was added. The initial search on ‘*involvement construct*’ showed high relevance in the field of leisure research, thus ‘leisure’ was used as an additional index word for the involvement construct. Several databases did not include the terms ‘involvement’ and ‘engagement’ as individual index words. In these cases, the suggestions of the individual databases were adapted (see Figure 1; Table 1). For example, the database PubMed did not include ‘engagement’ as an individual and index word. Instead, the database suggested ‘*patient engagement*’ and ‘*client engagement*’. Because a search on ‘*patient engagement*’ produced 51,011 results, the search was narrowed using the filter ‘age: child 0–18 years’. Another index word – ‘rehabilitation’ – was added, and as the search still produced 7286 results, a filter (age: child 0–18 years) was added to narrow the search.

In addition – using snowball search – publications that were frequently referred to were added to the search process. The snowball method is a way of finding literature by consulting the bibliography in the key document to find other relevant titles. This strategy ensured the inclusion of articles that might have been excluded due to additionally used index words, or due to different indexing of the articles.

The main search resulted in 3223 publications available for ‘engagement’ and 1685 for ‘involvement’. After screening the titles and abstracts in relation to the inclusion criteria, 71 studies met the inclusion criteria. After excluding duplications (two), the remaining 69 articles were followed up by reading the full texts. Of these, 45 articles did not specifically define the constructs of involvement or engagement. Eventually, 24 publications matched all the inclusion criteria, and were judged resourceful as a basis for a

scoping review. The first researcher performed the screening and selection of the articles independently. In the updated search in 2020 – using the same databases and search-terms – another 530 publications were found (87 for engagement; 443 for involvement). After the screening for relevance two additional full-texts were added to the review.

The snowball search resulted in another 11 publications. Thus a total of 37 publications were included in the study (10 for involvement, 27 for engagement). Data extraction was done manually and followed the methodological framework for scoping reviews proposed by Arksey and O’Malley [25]. Data were charted, including information about the author, year of publication, study location, type of study, and researched population. Furthermore, the included publications were screened for definitions and any measures used to capture the constructs of involvement and/or engagement. Charting further included key components of the understanding of the involvement or engagement construct (see Tables 2 and 3).

Results

Involvement

Ten publications were found regarding the construct of involvement. These were from the fields of sports management [28], consumer research [21,29], and leisure research [30–36]. Due to similarities in the populations and settings being researched, the publication in sports-management [28] was considered alongside the publications in leisure research. Even though the WHO has defined ‘involvement’ as being central to the definition of participation, no further explanation of the construct could be identified in the included articles, besides the earlier-mentioned footnote in ICF.

Consumer research

Consumer research views involvement primarily as the ‘*perceived importance of a product*’ [29,p.43], or ‘*a person’s perceived relevance of the object based on inherent needs, values, and interests*’ [21,p.342]. To evaluate consumer involvement, measures like the ‘*Personal Involvement Inventory*’ (PII) [21] and the ‘*Customer Involvement Profiles*’ (CIP) [29] have been developed. The questionnaires originally were meant to capture consumer perceptions of personal relevance relating to several consumer goods [33].



Table 2. Publications included in the involvement construct (* publications added through snowball research).

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on involvement construct; used/developed measures
Zaichkowsky* 1985 USA [21]	Marketing	Instrument development	268 undergraduate psychology students 49 MBA students 57 clerical and administrative staff members Face-to-face interviews with 207 housewives	A persons perceived relevance of the object based on inherent needs, values, and interests	Specific measures: <ul style="list-style-type: none"> developed instrument: Personal Involvement Inventory (PII) instrument was testes for validity and reliability PII is sensitive to different situations if people and product remain constant
Laurent and Kapferer* 1985 USA [29]	Marketing	Instrument development	Face-to-face interviews with 207 housewives	Perceived importance of a product	Specific measures: <ul style="list-style-type: none"> developed instrument: 'Consumer Involvement Profiles' (CIP) scale
Havitz and Dimanche* 1997 USA [30]	Leisure Research	Theoretical article		Involvement has been defined as an unobservable state of motivation, arousal or interest towards a recreational activity or associated product. It is evoked by a particular stimulus or situation and has drive properties (adapted from Rothschild, 1984).	About the involvement construct: <ul style="list-style-type: none"> based on social judgement theory antecedents of involvement: perceived importance of product or situation; perceived sign value; perceived pleasure; perceived risk different facets of involvement have different influences on consumer behaviour
Wiley et al. 2000 Canada [31]	Leisure Research	Theoretical article	205 hockey players and figure skaters	defined involvement as a 'psychological state of motivation, arousal, or interest between an individual and an activity or product'.	On measuring involvement: <ul style="list-style-type: none"> measures often 'borrowed' from consumer research → all instruments has its strength and weaknesses advices for multifaceted instruments since they provide more information than unidimensional instruments
					About the involvement construct: <ul style="list-style-type: none"> locates involvement theory within social judgement theory applied to sports and leisure in the 1970s from consumer research see three facets of involvement: attraction, self-expression, and centrality in sports: attraction seems to be more relevant for women, while centrality seems to be more relevant to men incorporating involvement into the study of leisure has the potential to generate new

(continued)

Table 2. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on involvement construct; used/developed measures
Funk and James* 2001 USA [28]	Sport Management	Theoretical article		Involvement is defined as a 'state of motivation, arousal or interest towards a recreational activity or associated product'	<p>understandings → assist in explaining particular aspects of leisure behaviour and leisure practice</p> <p>About the involvement construct:</p> <ul style="list-style-type: none"> • set within the 'Psychological Continuum Model' (PCM) • five facets of involvement: attraction, sign, centrality to lifestyle, risk probability, risk consequence <p>Specific measures:</p> <ul style="list-style-type: none"> • developed instrument: Sport Involvement Inventory (SII) • SII provided a psychometrically sound basis for involvement • instrument incorporated in the 'team sport involvement' (TSI) model
Funk, Ridinger and Moorman 2004 USA [32]	Leisure Research	Theoretical article Instrument development	<p>Focus group interviews with spectators of women's basketball</p> <p>SII pilot-test $n = 73$ women's basketball spectators → main study $n = 623$</p>	<p>Leisure involvement has been defined as an unobservable state of motivation, arousal, or interest towards a recreational activity or associated product that is evoked by a particular stimulus or situation that possesses drive properties</p> <p>sport involvement was defined as a psychological state of motivation, arousal, or interest in a team and related activities that is evoked by individual characteristics and situational factors that possess drive properties</p>	<p>About the involvement construct:</p> <ul style="list-style-type: none"> • involvement initially comes from research in psychology and social judgement theory • four facets of involvement: attraction, self-expression, centrality to lifestyle, and risk • aim of leisure involvement research to understand antecedents and behavioural consequences for participation in recreational activities and hobbies <p>Specific measures:</p> <ul style="list-style-type: none"> • tested instrument: Modified involvement Scale (MIS) • MIS is psychometrically sound • solid support for conceptualisation and measure of enduring leisure involvement <p>About the involvement construct:</p> <ul style="list-style-type: none"> • involvement consists of five dimensions: attraction, centrality, social bonding, identity affirmation, and identity expression. • enduring leisure involvement is best conceptualised as a multidimensional construct
Kyle et al. 2007 USA [33]	Leisure Research	Instrument development	<p>424 campers in Sumter National Forest</p> <p>430 consumers enquiring about angling opportunities in Santee Cooper Country</p>	<p>Involvement is said to reflect the degree to which people devote themselves to an activity or associated product. ... Additionally, involvement refers to the strength or extent of the cognitive linkage between the self and stimulus object</p>	<p>About the involvement construct:</p> <ul style="list-style-type: none"> • involvement consists of five dimensions: attraction, centrality, social bonding, identity affirmation, and identity expression. • enduring leisure involvement is best conceptualised as a multidimensional construct
Jun et al. 2012 USA/Greece/ Australia [34]	Leisure Research	Theoretical article	<p>424 recreationists in Sumter National Forest (USA)</p> <p>260 participants in health exercise in health centres (Greece)</p>	<p>Havitz and Dimanche's [30] often-used definition states that involvement is an '... unobservable state of motivation, arousal or interest towards a recreational activity or associated product, evoked by a</p>	<p>About the involvement construct:</p> <ul style="list-style-type: none"> • five facets of enduring involvement: attraction, centrality, social bonding, identity affirmation and identity expression <p>specific measures:</p>

(continued)

Table 2. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on involvement construct; used/developed measures
Havitz, Kaczynski and Mannell 2013 USA/Canada [35]	Leisure Research	Theoretical article	384 adults	particular stimulus or situation, and which has drive properties' defined by Havitz and Dimanche [30] as an 'unobservable state of motivation, arousal or interest towards a recreational activity or associated product, evoked by a particular stimulus or situation, and which has drive properties'	<p>used instrument: Modified Involvement Scale (MIS; Kyle et al. [33])</p> <ul style="list-style-type: none"> measures may shift from context to context to account for subtleties within populations and activities <p>Specific measures:</p> <ul style="list-style-type: none"> used instrument: Modified involvement Scale (MIS) <p>About the involvement construct:</p> <ul style="list-style-type: none"> leisure involvement has demonstrated influences on various types of leisure behaviour, yet has received only limited attention in the physical activity literature five dimensions of leisure involvement: attraction, centrality, identity expression, identity affirmation, social bonding leisure involvement has together with self- efficacy and motivation strong influence on behaviour <p>About the construct</p> <ul style="list-style-type: none"> consensus that involvement is a multi- dimensional construct depending on literature between three and 5 key-dimensions most important dimensions: importance, centrality, and self-expression
Surhartanto et al. 2019 Indonesia [36]	Leisure research/tourism	Theoretical article	313 adults	Refer to different definitions of involvement, starting with Havitz and Dimanche [32]	

Table 3. Publications included in the Engagement construct (* publications added through snowball research).

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct; used/developed measures
Kahn* 1990 USA [40]	Economics/ Management	Conceptual article		Personal engagement: 'harnessing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances'	About the engagement construct: <ul style="list-style-type: none"> • focuses on the work-setting • personal engagement has a physical, cognitive and emotional component • personal engagement is an outcome of job-involvement
Fredricks, Blumenfeld and Paris* 2004 USA [50]	Educational Psychology	Review		A meta-construct that includes behavioural, emotional and cognitive engagement Behavioural (i.e. time on task) Emotional (i.e. interest and value) Cognitive (i.e. self-regulation and learning strategies)	About the engagement construct: <ul style="list-style-type: none"> • engagement can be thought of as a 'meta' construct • engagement literature is marked by duplication of concepts and lack of differentiation in definitions across various types of engagement • engagement is multidimensional: behavioural, academic, emotional, and cognitive • engagement-construct has the potential to link areas of research about antecedents and consequences of students behaviour, emotions, and thought process • engagement-construct is inclusive: it combines constructs that usually are researched separately • research has yet not capitalised on the potential of the construct
Appleton et al.* 2006 USA [45]	Educational Psychology	Instrument Development (validation)	Ninth-graders (N = 1938)	Engagement is viewed as a multi-dimensional construct comprised of four subtypes: academic, behavioural, cognitive, and psychological. Other definitions quoted in main-text: Energy in action, the connection between person and activity Reflects a person's active involvement in a task or activity	Specific measures: <ul style="list-style-type: none"> • instrument: Student Engagement Instrument (SEI) – measuring the students level of cognitive and affective engagement in their school setting • statistical support for the validity of the SEI was found in numerous ways • model extends the engagement literature by providing empirical support for a self-reporting scale that includes unobservable aspects of engagement
				About the engagement construct: <ul style="list-style-type: none"> • behavioural and academic engagement as observable components, that more easily can be quantified • cognitive and psychological engagement includes less observable, more internal indicators 	
				on measuring engagement: <ul style="list-style-type: none"> • research thus far has focussed on observable components • focus on emotional/cognitive components of engagement crucial to better understand education outcome 	
				Specific measures:	

(continued)

Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct; used/developed measures
Kortte et al. 2007 USA [60]	Healthcare and rehabilitation	Instrument development	206 patients with different physical and cognitive impairments	Engagement in rehabilitation therapy may be defined as an interest in, and an intentional effort to, work towards the rehabilitation goals. Rehabilitation engagement is conceptualised as a construct that captures multiple elements, including a patient's attitude towards the therapy, his/her level of understanding or acknowledgment of a need for treatment, the need for verbal or physical prompts to participate, the level of active participation in therapy activities, and the level of attendance throughout the rehabilitation program.	<ul style="list-style-type: none"> • Hopkins Rehabilitation Engagement Rating Scale (HREES). Questionnaire for therapists • HREES is reliable and valid • Instrument measures aspects of the rehabilitation process that relate to short- and long-term outcomes • HREES is useful for measuring engagement as part of the medical rehabilitation process
Appleton, Christenson and Furlong* 2008 USA [44]	Educational psychology	Review		<p>Energy in action, the connection between person and activity</p> <p>Engagement reflects a person's active involvement in a task or activity</p>	<p>About the engagement construct:</p> <ul style="list-style-type: none"> • all definitions for student engagement include behavioural components – many also contained emotional/psychological components • far fewer conceptualisations include academic or cognitive components in their definition • necessary to move beyond indicators of academic and behavioural engagement to understanding the underlying cognitive and psychological needs of all students • knowledge of more cognitive and psychological subtypes of student engagement may enhance effective interventions • researchers need to clearly define their conceptualisation in each study
Duchan 2009 USA [52]	Psychology	Discourse analysis		Engagement has been employed in different literatures to describe the feelings one has about a relationship or about the activity taking place	<p>About the engagement construct:</p> <ul style="list-style-type: none"> • both engagement and involvement can be used to describe a person's avid and active connection with another person • engagement portrays degrees of involvement
Axelsson and Flick 2010 USA [48]	Educational psychology	Conceptual article		Quote Astin's definition of student involvement for student engagement: 'the quantity and quality of physical and psychological energy that students invest in the college experience'	<p>About the engagement construct:</p> <ul style="list-style-type: none"> • Alexander Astin's student involvement research in the 1980s builds foundation for what would eventually become modern engagement research • not all educational theorists agree that involvement and engagement are the same thing • engagement is seen primarily in emotional, cognitive, or behavioural terms or as a meta concept • modern definitions of the construct often confusing both semantically and conceptually
Lequerica and Kortte 2010	Healthcare and rehabilitation	Conceptual article		The concept of 'engagement in rehabilitation' is operationally defined here as a deliberate	<p>About the engagement construct:</p>

(continued)

Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct; used/developed measures
USA [61]				effort and commitment to working towards the goals of rehabilitation interventions, typically demonstrated through active, effortful participation in therapies and cooperation with treatment providers	<ul style="list-style-type: none"> engagement as one construct that incorporates several rehabilitation process elements engagement critical for patients fully benefiting from medical rehabilitation interventions engagement is differentiated from participation as a separate but related construct → participation signifies the behavioural component of engagement, it does not necessarily require high levels of invested interest motivation and engagement as two related but distinct constructs → motivation is energy directed in a particular way vs. engagement is that energy put into action therapeutic engagement as a primarily cognitive model of engagement
Finn and Zimmer* 2012 USA [49]	Educational psychology	review		<p>Define sub-components:</p> <p>Academic (behavioural): observable behaviours related directly to the learning process</p> <p>Social (behavioural): the extent to which a student follows written and unwritten classroom rules of behaviour</p> <p>Cognitive (behavioural internal): the expenditure of thoughtful energy needed to comprehend complex ideas in order to go beyond the minimal requirements</p> <p>Affective: emotional response characterised by feelings of involvement in school as a place and a set of activities worth pursuing</p> <p>Motivation is defined as individuals' energy and drive to learn, work effectively and achieve to their potential, and engagement as the behaviours aligned with this energy and drive</p>	<ul style="list-style-type: none"> About the engagement construct: <ul style="list-style-type: none"> early definition of engagement: 'the student's psychological investment in and effort directed towards learning, under-standing, or mastering the knowledge, skills, or crafts that academic work is intended to promote' newer models with three, four or more components: academic, social, cognitive, affective still no clarity on the definition of the construct
Liem and Martin* 2012 Australia [54]	Educational psychology	Instrument development	Collection of multiple studies/samples		<p>Specific measures:</p> <ul style="list-style-type: none"> developed instrument: Motivation and Engagement Scale (MES), measuring the students' motivation, cognitive and affective engagement, as well as his perception for himself as a student MES-High School (MES-HS) has strong psychometric properties MES-HS is sensitive to detecting changes in students' motivation and engagement after motivation and engagement intervention. MES-Work (MES-W), MES-Music (MES-M), and MES-Sport (MES-S) – have been developed MES-S has been validated with sub-elite young athletes at a specialist sports high school <p>About the engagement construct:</p> <ul style="list-style-type: none"> Motivation and Engagement Wheel was developed as a multidimensional framework

(continued)

Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct: used/developed measures
Kemp et al. 2013 Australia [53]	Educational psychology	Study on engagement of young children with disabilities in childcare settings Clinical Trial/ Intervention Study	Young children with disabilities ($n = 37$; age 13 – 36 month)	Child engagement was defined as 'situationally appropriate interactions with the physical environment, materials, or other persons'	representing salient cognition and behaviour pertinent to motivation and engagement Specific measures • measure used: ICERR, which has been previously field tested and validated
Alegria et al. 2014 USA [56]	Medicine	Clinical Trial/ Intervention Study	722 patients (18–70 years)	Engagement was defined as the proportion of behavioural health visits attended of those scheduled in the 6 months after the baseline assessment,	Specific measures • medical records review or by querying electronic health records
Bhuvanaiah and Raya 2014 India [37]	Management	Review		Engagement is a degree, which exists to certain extent. During the process of engagement, employee gets motivated either of self- motivation or by external motivation which drives employee to be energised to perform a task. Employee engagement is said to be so called 'energy' utilised in accomplishing purpose.	About the engagement construct: • even though engagement is a well-researched construct, it lacks a universally acceptable definition that distinguishes employee engagement from other relative constructs • researchers defined the concept in the view of individual perspective or organisational perspective in relation to the purpose of their study
King, Currie and Peterson* 2014 Canada [24]	Healthcare and rehabilitation	Conceptual article/ scoping review		We define engagement as a multifaceted state of affective, cognitive, and behavioural commitment or investment in the client role over the intervention process We therefore define client engagement as a multifaceted state of motivational commitment or investment in the client role over the treatment process.	About the engagement construct: • engagement as both a child and family level construct • older frameworks focus more on overcoming barriers for therapy and not on optimising engagement or the role of the therapist • three components: affective involvement (emotional involvement in the process and with the therapist); (b) cognitive involvement (beliefs about the need for intervention and therapy effectiveness); and behavioural involvement (in- session participation; behavioural collaboration; and beliefs about personal self-efficacy to carry out agreed-upon intervention outside of treatment) • engagement components reciprocally influence one another
Bright et al. 2015 New Zealand [57]	Healthcare and rehabilitation	review		Engagement is a co-constructed process and state. It incorporates a process of gradually connecting with each other and/or a therapeutic program, which enables the individual to become an active, committed and invested collaborator in healthcare.	About the engagement construct: • engagement conceptualised in two inter-related ways, as a process (engaging with) and a state (engaged in) • the state of engagement as an internal state expressed through observable behaviours • important to see differences to other concepts: involvement exists on a continuum from being passive recipients of information through to autonomously making decisions

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Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct: used/developed measures
Harashitha 2015 India [39]	Management	Review		Employee engagement is an employee's commitment to, involvement with, emotional attachment to, and satisfaction with their work and organisation	on measuring engagement <ul style="list-style-type: none"> measures that consider engagement should include items that better represent this multidimensional concept → need to consider how to best measure the internal state of engagement
Moreira et al. 2015 Portugal [55]	Educational psychology	Study on student engagement of students with and without SEN	388 students with and without SEN (mean age 13.46)	'School engagement is a multidimensional construct including contextual, behavioural, emotional, and cognitive components'	About the engagement construct: <ul style="list-style-type: none"> three dimensions of employee engagement: psychological process; emotional state; behavioural state Specific measures: <ul style="list-style-type: none"> used instrument Student Engagement Instrument (SEI) About the engagement construct: <ul style="list-style-type: none"> school engagement as a multi-dimensional construct students' engagement with school as an interactive process → result of how school meets the cognitive and psychological needs of the student
Rieckmann et al. 2015 International [63]	Healthcare and Rehabilitation	Conceptual article	Workshops/expert panel with researchers and experts from practice (multiple sclerosis)	The US Centre for Advancing Health defines patient engagement (sometimes known as 'patient activation') as 'actions individuals must take to obtain the greatest benefit from the healthcare services available to them'	About the engagement construct: <ul style="list-style-type: none"> represent the primary thoughts of the MS in the 21st Century Steering Group patients are required to change their role from healthcare 'receiver' to 'engager' role of the health-care professional also needs to evolve from being a 'provider' of healthcare to become a 'motivator' and 'supporter' Patient engagement can be practiced at the macro (system), meso (institution), and micro (medical encounter) levels Specific measures: <ul style="list-style-type: none"> develop survey measures for CE (Study 1) and refine existing scales for EE (Study 2) 16-item survey for measuring CE survey items used to measure EE were adapted and refined from earlier research of the authors About the engagement construct: <ul style="list-style-type: none"> customer engagement (CE): engagement is represented as either a state of mind or an activity beyond purchases. study also provides a strong theoretical rationale and empirical evidence for the positive impact of high engagement scores on firm performance
Kumar and Pansari 2016 USA [42]	Economics/Marketing	Instrument development	CE: 762 customers from different firms EE: 750 employees of 30 companies	We define engagement as the attitude, behaviour, the level of connectedness (1) among customers, (2) between customers and employees, and (3) of customers and employees within a firm Employee engagement (EE) has been defined as a multi-dimensional construct which comprises of all the different facets of the attitudes and behaviours of employees towards the organisation.	

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Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct; used/developed measures
Megha 2016 India [43]	Management	Review		Quote 15 different definitions: Earliest: Kahn [40] Latest: an individual employees' cognitive, emotional and behavioural state directed towards desired organisational outcomes.	About the engagement construct: <ul style="list-style-type: none"> term engagement has become so ambiguous that it is rare to find two researchers defining it in the same way no perfect consensus from all the official definition in the research literature for the term engagement different approaches to phenomenon: Need-satisfying Approach; Born-Out Antithesis Approach; Work-Engagement Approach; Satisfaction-Engagement Approach; Multidimensional Approach
Dhanesh 2017 Dubai [47]	Educational Psychology	Conceptual article		Engagement is an affective, cognitive, and behavioural state wherein publics and organisations who share mutual interests in salient topics interact along continua that range from passive to active and from control to collaboration, and is aimed at goal attainment, adjustment, and adaptation for both publics and organisations.	About the engagement construct: <ul style="list-style-type: none"> despite a lack of clarity on the concept, research on engagement has been booming conceptualisation of engagement as a multidimensional concept need to include affective and cognitive elements in definition
Graffigna, Barelo and Bonanomi 2017 Italy [58]	Healthcare and Rehabilitation	Conceptual article	352 Italian-speaking adult chronic patients	In previous studies, patients' engagement refers to the ability of patients to give sense and to adjust to their disease and their actual care condition.	Specific measures: <ul style="list-style-type: none"> self-administered online questionnaire used: Patient Health Engagement Scale (PHE-S); Patient Activation Measure (PAM-13); Morisky Medication Adherence Scale (MMAS-4); Health Care Climate Questionnaire (HCCQ); Self-Assessment Manikin Scale (SAM); demographic and clinical characteristics results confirmed relationship by demonstrating that patients' activation is associated to their reported treatment adherence
Hollingshead et al. 2017 USA [52]	Educational Psychology	Review	Students without; at risk; and with disability	'engagement as a multilayered, complex concept that involves emotional, cognitive, and behavioural components'.	About the engagement construct: <ul style="list-style-type: none"> concept of patient activation often overlaps with one of patient engagement described process of healthcare journey in its four evolving phases (blackout, arousal, adhesion, eudaimonic project) → Patient Health Engagement Model (PHE-model) About the engagement construct: <ul style="list-style-type: none"> engagement as a multi-layered, dynamic concept incorporates an emotional, cognitive and behavioural components ecobehavioural approach and behavioural approach both focussed on behavioural/

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Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct: used/developed measures
Ho Kim, Park and Kwon 2017 South Korea/USA [41]	Management	Instrument development (validation)	Study 1: 307 workers from 12 companies Study 2: 342 workers from 12 companies	Engagement is defined as "a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption"	observable aspects → miss complexity/interaction with cognitive and emotional aspects on measuring engagement: <ul style="list-style-type: none"> concept of engagement for students without and with disability is the same, yet often studied/defined differently Specific measures: <ul style="list-style-type: none"> Used instrument: Korean version of Utrecht Work Engagement Scale nine-item UWES-K has been determined to be an adequate measure of work engagement in Korean white-collar workers results of this study show that the concept of work engagement can be used in the South Korean context Specific measures: <ul style="list-style-type: none"> described the development and initial properties of a conceptually grounded measure developed instrument: Paediatric Rehabilitation Intervention Measure of Engagement-Observation (PRIME-O) measure's utility and psychometric properties emerges through examination and use over time more behavioural signs were observed/reported for children and more cognitive signs of engagement were observed/reported for youth and parents evidence of excellent interrater consensus, construct and content validity of the instrument
King et al. 2017 Canada [59]	Healthcare and Rehabilitation	Instrument development	Samples 1–3: total of 10 observers who made ratings while taking part in training sessions Sample 4: 10 service providers in an interview study	engagement was defined as a multifaceted state of affective, cognitive and behavioural involvement in the intervention process, which motivates clients to work on intervention tasks outside of therapy	<ul style="list-style-type: none"> measure's utility and psychometric properties emerges through examination and use over time more behavioural signs were observed/reported for children and more cognitive signs of engagement were observed/reported for youth and parents evidence of excellent interrater consensus, construct and content validity of the instrument About the engagement construct: <ul style="list-style-type: none"> consider engagement to be a multifaceted optimal client state comprising a hopeful stance (affective involvement); conviction with respect to the appropriateness of intervention goals and processes (cognitive involvement); and confidence in personal ability to carry out the intervention plan (behavioural involvement) engagement in children's services is likely different from adult health care. unidimensional measures are not as useful or valid as multidimensional ones
Madan 2017 India [38]	Management	Conceptual article		Employee engagement: employees' willingness and ability to contribute to company success. Another way to think about engagement is the extent to which	<ul style="list-style-type: none"> About the engagement construct: <ul style="list-style-type: none"> consider engagement to be a multifaceted optimal client state comprising a hopeful stance (affective involvement); conviction with respect to the appropriateness of intervention goals and processes (cognitive involvement); and confidence in personal ability to carry out the intervention plan (behavioural involvement) engagement in children's services is likely different from adult health care. unidimensional measures are not as useful or valid as multidimensional ones About the engagement construct: <ul style="list-style-type: none"> employee engagement is so vast that it covers almost all the aspects that come under the scope of human resource management

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Table 3. Continued.

Author Year Country Reference	Field of research	Type of study	Researched population	Definition (quoted from full text)	Key content/results on engagement construct; used/developed measures
Mayhew et al. 2019 United Kingdom [62]	Healthcare and Rehabilitation	Instrument development		<p>employees put discretionary effort into their work, in the form of extra time, brainpower and energy.</p> <p>Engagement as a purposeful act, with collaboration and cooperation being an active choice on the part of the patient and done in order to maximise outcomes or improve their experience of receiving an intervention</p>	<p>multiple components to engagement: cognitive, affective, behavioural</p> <p>multiple stages of engagement (based on Maslow's need hierarchy): satisfied; motivated; committed; and advocate stage</p> <p>About the engagement construct:</p> <ul style="list-style-type: none"> comprised five dimensions: attendance, need for physical or verbal prompts to participate, positive attitude towards the therapy activity, acknowledgement/acceptance of need for services, active participation
					<p>Specific measure:</p> <ul style="list-style-type: none"> Hopkins Rehabilitation Engagement Scale (HREERS-RV) Measure developed for the rehabilitation-setting Adapted for reablement context in England (reablement version – RV)

Leisure research

Studies from leisure research viewed involvement as a complex and multidimensional construct [28,30–35]. Havitz and Dimanche [30,p.346] define leisure involvement, based on Rotschild's definition from 1984, as 'an unobservable state of motivation, arousal or interest towards a recreational activity or associated product. It is evoked by a particular stimulus or situation and has drive properties'. With minor variations in the formulation, this definition remained consistent in later publications in leisure research and sports-management, which were included in this review (see also Table 2) [28,31–35]. However, authors from leisure research [33] and sports-management [31] base their understanding of involvement on what has been established in consumer research in the 1980s [21,29].

A measure specific to the leisure context is the 'Modified Involvement Scale' (MIS) [33]. The self-report MIS questionnaire consists of 15 items related to a specific activity, answered on a five-point Likert scale. The questionnaire is split into three items for each of the five dimensions (*attraction; centrality; social bonding; identity affirmation; identity expression*) [33].

In leisure research, involvement is seen as a multi-dimensional construct [28,30–35]. Havitz and Dimanche [30] incorporated the four dimensions of importance, pleasure, sign, and centrality of lifestyle into their conceptualisation of leisure involvement. Publications after the millennium primarily divided involvement into five dimensions. Within sports management, Funk and James [28] identified the dimensions of attraction, sign, centrality to lifestyle, risk probability, and risk consequence. Three recent publications [33–35], all representing leisure research, include the facets of attraction, centrality, social bonding, identity affirmation, and identity expression – the latter being similar to sign – in their understanding of involvement. Attraction refers to a combination of the individual's perceived importance, preferences, and pleasure towards a specific activity or product [30]. Centrality (to lifestyle) refers to the extent to which the individual's lifestyle choices and personal investment are structured around an activity [34]. Social bonding explains the social ties that bind the individual to a specific activity [33]. Identity affirmation includes the degree to which a leisure activity offers opportunities to affirm the self to oneself. Identity expression or sign is how one can express this self to others [33]. Finally, Surhartanto et al. [36] conclude that while the dimensions of involvement have varied between authors, the most relevant

dimensions might be importance, centrality and self-expression.

Engagement

For the engagement construct, 27 relevant publications were found. These studies were divided into management/economics [37–43], educational psychology [44–55], and healthcare and rehabilitation [24,56–63]. A more detailed overview of the included publications on engagement can be found in Table 3.

Management and economics

The earliest definition included in this study was formed 1990 by Kahn [40,p.694], who referred to personal engagement (in a work context) as the *'harnessing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances'*. Here the three dimensions of 'physical engagement', 'cognitive engagement', and 'emotional engagement' are incorporated into a multi-dimensional construct of engagement.

Later, scholars in the field of human resources management further specified engagement, using the term 'employee engagement'. This did not focus on the individual, but on how employers could motivate their employees and make them work harder [37,64], or improve the employees' satisfaction with their job and/or organisation [38,39,41]. Consistent in many publications in the management sector is the approach to engagement as a multidimensional or multi-layered construct [38–41].

Educational psychology

Another area of research that has studied the engagement construct extensively in the field of educational psychology – mostly in a school context, calling it 'student engagement'. However, many publications/studies in this field lack a common definition [44,45,47,49,50,55]. This signifies that researchers need to clarify how they define the construct in their specific studies [44]. Axelson and Flick [46] argued that the origins of the student engagement construct are grounded in the 1980s' understanding of 'student involvement', defined by Alexander Astin as *'the quantity and quality of physical and psychological energy that students invest in the college experience'* [46,p.40].

Common to the understanding of engagement in educational psychology is the multidimensionality of the construct. Most of the authors in this scoping

review included several dimensions in the definition. There is a behavioural or social dimension, as well as a cognitive and an affective, emotional or psychological dimension [44–47,49,50,52,55]. In the context of the affective dimension, authors use the terms 'affective', 'emotional', and 'psychological' interchangeably, describing the same aspects for engagement. Specific to the educational setting, several authors divided the observable behaviours related to engagement into a social/behavioural component and an academic dimension [44,45,49].

Combining all components in educational psychology, engagement is often referred to as a meta-construct [46,50]. Finn and Zimmer [49,p.102–103] define each sub-dimension: academic engagement is seen as the *'... observable behaviours related directly to the learning process ...'*; behavioural/social engagement as the *'... extent to which a student follows written and unwritten classroom rules of behaviour ...'*; cognitive engagement as *'... the expenditure of thoughtful energy needed to comprehend complex ideas in order to go beyond the minimal requirements ...'*; and affective/emotional/psychological engagement as the *'... emotional response characterised by feelings of involvement in school as a place and a set of activities worth pursuing ...'*

Traditionally, observable components of engagement have been prioritised for the evaluation of engagement. Several authors have pointed out that a focus on the cognitive and affective components is now necessary [44,45,52]. To study the cognitive and affective components, self-reported measures such as the 'Student Engagement Instrument' (SEI) [45] and the 'Motivation and Engagement Scale' (MES) [54] have been developed and tested for their psychometric properties. The SEI measures the student's level of cognitive and affective engagement in their specific school environment [45]. The MES measures the students' motivation and engagement towards learning, how to study, and their perception of themselves as a student. There are different versions for different settings, like Primary School (MES-Junior School; MES-JS), High School (MES-HS), or Collage and University (MES-UC) [65].

Healthcare and rehabilitation

Discussion on the engagement construct within healthcare and rehabilitation, included in this scoping review, started in the first decade of the 2000s. For the development of the Hopkins Rehabilitation Rating Scale (HRERS), Kortte et al. [60,p.881] define rehabilitation engagement as

... a construct that captures multiple elements, including a patient's attitude toward the therapy, his/her level of understanding or acknowledgment of a need for treatment, the need for verbal or physical prompts to participate, the level of active participation in therapy activities, and the level of attendance throughout the rehabilitation program.

Later, Lequerica and Kortte [61] specified that rehabilitation engagement is specifically focussed on the rehabilitation or therapy process, being the effort and commitment the patient shows in working towards the goals of the intervention, through both active participation and collaboration with the treatment provider. This is in accordance with the conceptualisation of engagement by 'The US Centre for Advancing Health', quoted by Rieckmann et al. [63,p.204] as '*... actions individuals must take to obtain the greatest benefit from the healthcare services available to them*'.

Algeria et al. [56] limited the construct of engagement to the attendance of scheduled health appointments, whereas King, Currie and Peterson conceptualised engagement as a multidimensional construct, defining engagement as '*... a multifaceted state of affective, cognitive, and behavioural commitment or investment in the client role over the intervention process*' [24,p.2]. King et al. [24] defined engagement as a combination of an affective, a cognitive, and an observable behavioural component. All these components influence one another. King et al. [59] used this definition when developing the 'Paediatric Rehabilitation Intervention Measure of Engagement-Observation' (PRIME-O). In the Prime-O the healthcare professionals fills out an observation-protocol on the clients engagement in relation to eight observable indicators of engagement [59].

In their review of the engagement construct in healthcare and rehabilitation Bright et al. [57] viewed engagement as both a state of being 'engaged in' (e.g. activity) and a process of 'engaging with' (e.g. someone). They agreed on the multidimensionality of the construct and argued for measures that include items focussing on the internal state of engagement. Bright et al. [57] also pointed out the difference between engagement and involvement, with involvement existing on a continuum – from being a passive recipient of information to being autonomously in one's decisions – and, engagement being more than that, and incorporating active partaking in the specific activity.

Based on prior research by Bright et al. [57], Mayhew et al. [62] adapted the HRERS for the reablement context in England. In this context, they define engagement based as '*a purposeful act, with*

collaboration and cooperation being an active choice on the part of the patient and done in order to maximise outcomes or to improve their experience of receiving an intervention' [62,p.778]. They also give five dimension for the observation of patient engagement in the reablement context. These consist of attendance, need for physical or verbal prompts to participate, positive attitude towards the therapy activity, acknowledgement/acceptance of need for services, active participation

Discussion

The results from this scoping review indicates that the two subdimensions of participation need to be separated, with involvement being a more stable internal state of interest towards an activity and engagement referring to the specific in behaviour, emotions, and thoughts meanwhile participating in a specific setting. However, both constructs also overlap at some points and interact with each other.

Involvement

The scoping review identified two fields of research that both defined and measured involvement – consumer research [21,29] and leisure research [30–36]. Since one of the main goals and outcomes of rehabilitation interventions is increasing participation [12,15], the conception given in leisure research – focussing on leisure activity and products associated with them – seems closer to rehabilitation than consumer research – focussing on the consumption of products by consumers. There seems to be a consensus on defining involvement as an unobservable state of motivation, arousal or interest towards a specific activity or product [28,30–35]. This internal state is triggered by a specific stimulus or situation. Moreover, leisure research agrees on the multidimensionality of the construct, with the earlier described five sub-dimensions, (*attraction; centrality; social bonding; identity affirmation; identity expression*) [33–35]. Surhartanto et al. [36] argue that of these dimensions, attraction, centrality and identity-expression might be the most relevant. Havitz and Mannell [66] further distinguish between 'situational involvement' and 'enduring involvement'. The former is more connected to an individual situation and context, while the latter describes a more stable state over a long time period. In regards to measuring involvement, Havitz and Mannell [66] argue that situational involvement can only be measured validly in the

individual situation since it depends to a large extent on the specific context – as engagement does. In the view of the authors, possible measure of participation will assess the general patterns of participation and levels of involvement towards different activities (enduring involvement).

An important take-home message of this study is that involvement seems to be an internal state (e.g. ‘interest in’ football, classical music, etc.) that can affect the individual’s behaviour [21,31]. It is hardly observable because it does not imply actively executing the activity. A youngster with disability could, for example have high levels of involvement with football without ever playing the game, by being most interested in the ‘product’ of football (e.g. professional football leagues). Of course, this interpretation depends on how far one stretches the concept of participation. Is someone already participating in football simply by watching a match on TV, or does one have to be on the pitch, kicking the ball? Following the general definition of participation in the Oxford dictionary, the former version would not be sufficient [11].

Existing measures of involvement are often proxy and retrospectively rated, focussing on enduring involvement. Since involvement seems to be an internal state it would probably be difficult to capture involvement by someone else than the child or youth itself, or for them to recreate how they might have been thinking or feeling at an earlier time when they were ‘involved’. The lack of self-report or self-ratings in healthcare and rehabilitation is therefore a limitation and needs to be addressed [8]. Further, since involvement seems to be a rather stable internal state it could preferably be measured longitudinally.

Engagement

A similarity finding in the literature from economics/management, educational psychology, and healthcare and rehabilitation is the multidimensionality of the construct of engagement, consisting of an observable component of ‘*behavioural engagement*’ and two unobservable components ‘*affective/emotional/psychological engagement*’ and ‘*cognitive engagement*’ [24,40,44–46,49,50,54,59].

Using football as an example once again, an adolescent could engage in the activity during physical education lessons. In that situation, she could follow all the rules, having many effective contacts with the ball, and contributing to the team’s success (high level of behavioural engagement), yet feel uncomfortable

and experience a poor relationship with the teacher and/or team-mates (affective engagement). Moreover, one might not see any value in the activity for future endeavours or personal development (cognitive engagement), since it teaches the individual no skills that will be needed in future life. For example an adolescent might participate in football for different reasons: in order to participate together with friends, in order to compete in tournaments, or just to stay fit. In this case, the individual would have a low level of cognitive and affective engagement.

A definition of engagement across all the included fields of research, should comprise the individual’s behavioural, cognitive and affective investment during role performance. Role performance implies that the individual is executing and experiencing their specific role, for example, as a student, playmate, player in a sports team etc., in a specific context (e.g. school, peer group, sports club). Going back to the football example our youngster might participate in playing football at P.E. lessons as a student in order to earn grades, or playing football as a peer together with friends just for fun, or as a team-mate in a sportsclub in order to compete. Eventhough participation take place in the same activity every time, the different contexts will effect the person’s role, motivation and the expectations towards the activity. This scoping review has shown that the unobservable aspects of engagement are subjective [44,45,49,57,60]. Most definitions refer to a specific role – often already applied in the terminology – in a specific context. In management and economics authors speak of ‘*employee engagement*’ in the context of a specific work environment, organisation, or company [38,39,42,43]; in educational psychology, scholars speak of ‘*student engagement*’ in the specific context of a school [44,46,49,50,52]; and in healthcare and rehabilitation researchers refer to ‘*client engagement*’ [24], or ‘*patient engagement*’ [57,63] in the context of a rehabilitation, or therapy interventions. This notion of different contexts influencing the individual is in line with the transactional framework for paediatric rehabilitation, proposed by King et al. [67], were the authors argue that transactional processes between different contexts and individuals lead to development.

A change in setting (e.g. transitioning through school) will also influence the subjective perception of the child/adolescent regarding its experience during participating in an activity. Accordingly, before measuring engagement, a definition of both role and setting is necessary in order to choose an appropriate

measuring instrument. Moreover, data on engagement of a child/adolescent in one setting may not automatically be transferred to another setting. Furthermore, engagement is always connected to the actual execution of, or participation in, a specific activity, in a specific context/setting.

Within educational psychology, healthcare and rehabilitation, researchers have pointed out that in the past the observable components have dominated the measurement of engagement, and that a focus on the internal and subjective components is now required [8,15,45]. To examine the subjective, unobservable components of cognitive and/or affective engagement self-reported instruments like the SEI [45] or the MES [54] in educational psychology are necessary. In healthcare and rehabilitation, engagement has thus far mainly been assessed by referring to medical records and frequency of attendance [56], therapist-reported questionnaires like the HRERS [60] or HRERS-RV [62], or observable protocols like the PRIME-O [59]. At the same time, Adair et al. have recommended more self-reported instruments [8].

Relationship between involvement and engagement

In educational psychology, Axelson and Flick [46] argued that even though student engagement is grounded in student involvement theory from the 1980s, the two concepts may have grown apart over time. Duchan [48] specified the difference between the constructs, saying that engagement is a display of ‘involvement in action’. This can be supported within healthcare and rehabilitation by Bright et al. [57], who argue that being active in the specific setting of therapy is the necessary component that separates engagement from involvement, making involvement a precondition for engagement.

The fact that authors in healthcare and rehabilitation [59] or educational psychology [49] label their sub-dimensions of engagement with behavioural, affective or cognitive ‘involvement’, or use the term ‘involvement’ in their descriptions of the engagement construct, makes the discussion difficult. At the same time, such cases exemplify the ongoing confusion about the two constructs.

From the perspective of this scoping review – searching for definitions on involvement and engagement, especially feasible for measure development – the constructs of involvement and engagement need to be separated. Involvement describes a general

internal interest and arousal towards, or motivation for, a specific activity or activity-related product, whereas engagement refers to the specific demonstrated behaviour and internal experience while performing an activity in a specific setting. Undoubtedly, both concepts interact with one another and are likely to be transactional. High levels of involvement (i.e. interest in professional football) may support a willingness to engage in the activity and interact with others in a given activity/situation (i.e. attending training at a football team/club); and positive experiences while engaging in an activity may positively affect the person’s subsequent level of involvement. Thus, both constructs overlap, especially when comparing situational involvement and the internal aspects of engagement. When measuring participation in general, researchers should focus on enduring involvement for the general interest in specific activities (e.g. football). Cognitive and affective engagement are to be measured context-specific (e.g. the experience of participating in football during P.E. lessons at school).

Following the understanding of the involvement and engagement constructs in this scoping review, one could consider rephrasing the definition of participation in the ICF (*‘involvement in life situation’* [12,p.9]) into *‘engagement in life situations’*. Involvement in a life situation would merely describe a person’s interest, or perceived relevance towards, a specific life situation or setting, be it education, work, or leisure. This does not necessarily imply taking part in the life situation. Moreover, the footnote in the ICF, describing the WHO’s understanding of involvement – *‘... ‘involvement’ incorporate taking part, being included or engaged in an area of life, being accepted, or having access to needed resources’* [12,p.13] – seems much more congruent with the concept of engagement in the literature reviewed in this scoping review. *‘Taking part’* would reflect the behavioural dimension of engagement and *‘being included’* or *‘being accepted’* would reflect the affective dimension of engagement. This approach is similar to Krieger et al. [68, p.2], who extend the ICF definition in the context of adolescents with autism spectrum disorder as *‘... being engaged in and/or performing meaningful activities in occupational and social roles ...’* Approaches like that could enrich the ICF-framework and might give it more clarity.

With regard to the fPRC model [7], the findings of this scoping review point towards an argument that characterises involvement in a way that most sources

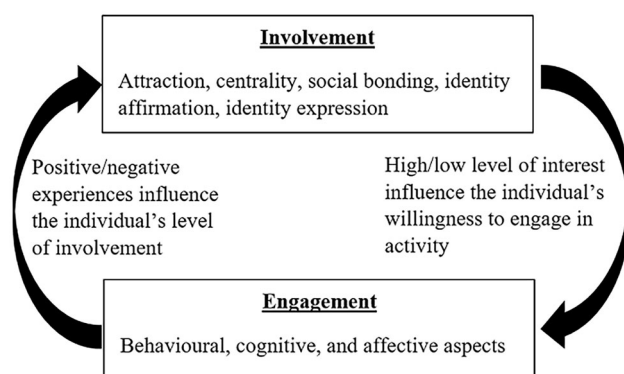


Figure 2. Relation between involvement and engagement.

of this review would define as engagement. This accounts mostly for the statement ‘... *experience of participation while attending ...*’ [7, p.18] in the fPRC-model’s definition of involvement, which literature in this review would use to describe as engagement. At the same time, Imms et al. [7] refer to personal preferences, as a separate intrinsic factor of participation. Where the fPRC-model sees engagement more as a precondition of involvement, which the literature of this review connects to the involvement sub-dimension of attraction. The results of this scoping review lead to the argument that it might be the other way around, with involvement as an internal state of motivation, working as a prerequisite of engagement. However, this might be a ‘what was first: egg or hen?’-argument, since both constructs may interact in a kind of loop effect (as shown in Figure 2). Therefore, it strongly depends on the individual’s standpoint.

This study has to recognise some limitations. The main one would be that most of the screening and charting was executed by one person (the first author). Moreover, the number of fields of research and databases searched this was not deemed feasible. Future studies, focussing on singular aspects in single fields of research, should use fewer index words and limitations, to wider the scope of publications included in the first round of screening. This could, for example, also increase the variety of perspectives within one field of research. The choice of databases can also be discussed as other databases may have given other perspectives. No evaluation was done of the studies quality regarding their risk of bias. Since the aim was to evaluate the definition of constructs and not the effect of interventions the evaluation was considered to not be necessary.

Conclusion and future directions

This scoping review explored knowledge from other and partly unrelated fields. The results gained, point in a direction that the two subdimensions of participation need to be separated, with involvement being a more stable internal state of interest towards an activity and engagement referring to the specific in behaviour, emotions, and thoughts meanwhile participating in a specific setting. However, both constructs also overlap at some points and interact with each other. This knowledge is useful in the development of self-reported measures of participation for occupational therapists in the field of paediatric rehabilitation as well as in other fields or for other professionals. The subdimension, involvement, can be used for measuring general participation of the individual longitudinally, since it is assumed to be rather stable over time. However, engagement, being connected to a specific settings, could be used when evaluating participation in specific activities in specific settings. The results of this study may be useful for future research in this area.

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