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Positive Psychology Interventions for Individuals with Mental Disabilities
- Literature Review -

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Abstract

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Abstract

Background and Objectives: As opposed of pathologizing people, positive psychology mainly focuses on well-being and life-satisfaction and positive psychology interventions (PPI) have been established to foster quality of life in both clinical and non-clinical populations. From previous research it is known that mentally disabled people, providing they receive sufficient support, are capable of experiencing pleasure and to lead a life that satisfies their needs. At the present day, little is known about the potential of PPIs in the context of mental disabilities. Therefore, the present systematic literature review aims at presenting the current state of knowledge about the application of positive psychology in the context of mental disabilities.

Method: A systematic literature search have been carried out using the scientific databases Scopus, Web of Science and PsycInfo looking for studies published between 1998 and April 2018 using keywords to identify positive psychology interventions (e.g. (applied) positive psycholog*) especially tailored to mentally disabled individuals (e.g. mental disab*). The analysis of the interventions has been organized around Seligman's basic elements of well-being (positive emotions, engagement, relationships, meaning and accomplishment), and potential effects have been explored taking account of methodological aspects of the studies.

Results: Eleven studies have been reviewed showing that, for instance, experiencing positive emotions, developing goals, strengthening positive and trustful social relationships, and exploring personal achievements and strengths have been central goals of the interventions. For this purpose, various methods and techniques (e.g. mindfulness mediation and telling personal life-stories) have been used. Depending on intervention method type (e.g., life-story), positive psychology interventions were able to significantly enhance well-being.

Conclusion: This review shows that positive psychology interventions for people with mental disabilities is a relatively young yet promising subfield. Indeed, few studies available indicate that PPIs can successfully improve well-being and quality of life of individuals with mental disabilities. To further investigate the potential of PPIs to improve wellbeing in the context of mental disabilities, additional RCT studies with practice-based case studies will have to be complemented.

Preface

The topic of the present review covering mild, moderate and severe mental disabilities in the context of positive psychology is not only important in terms of a theoretical point of view, but also in practical terms. In the Netherlands, Avelijn is a widely branched institution providing care for individuals with mental disabilities inspired by the science of positive psychology. Up to now, there are more than 80 facilities providing care for more than 1900 clients. In their work, they are inspired by the scientific foundations of Robert L. Schalock, a leading researcher within the field of positive psychology, providing a scientific basis for their working principles of dealing with mentally disabled people.



Introduction

Traditionally, the science of psychology mainly focuses on healing mental disorders while a better understanding of those factors helping individuals to make their lives more fulfilling remained relatively unconsidered (Magyar-Moe, Owens and Conoley, 2015). During his tenure as president of the American Psychological Association in 1998, Martin E.P. Seligman stressed the importance to focus one's attention more on the positive aspects of human beings (Shogren, Wehmeyer, Buchanan and Lopez, 2006) and laid the foundation of a new era within the science of psychology. Positive psychology focuses on topics such as well-being, (life) satisfaction, strengths, talents or virtues (e.g., being creative, ambitious or open minded) and aims to identify, to describe and to promote those conditions and characteristics that make life most worth living. As opposed of pathologizing people, psychology should recognize the abilities and strengths of people to promote health and well-being in the long term (*the good life*) based upon their positive qualities (Seligman and Csikszentmihalyi, 2000). Within this framework, well-being is one of the most common basic concept of positive psychology. Historically, the eudaimonic tradition defined well-being in terms of self-realization through fulfilling one's own potential [*positive functioning*], whereas well-being according to the hedonic perspective consists of pain avoidance, pleasure and subjective happiness [*positive feelings*] (Ruini, 2017).

During the last decades, researchers from all over the world were engaged in positive psychological research and sparked off an explosion of positive psychology books, articles and research work, so that there has been an enormous amount of literature available covering research on positive psychology. Moreover, a number of interventions applied on various populations and target groups have been developed (*see e.g.*, Harrison, Al-Khairulla and Kikoler, 2016 [eating disorder]; Chaves, Lopez-Gomez, Hervas and Vazquez, 2017 [depression]; Andrewes, Walker and O'Neill, 2014 [brain injury], Seligman, Steen, Park and Peterson, 2005 [general population]; Westerhof, Beernink and Sools, 2016 [intellectual disabilities]). Against the background of various positive psychology interventions (PPI) that have been developed by now, the existing literature can be seen under three different point of views.

First, positive psychology interventions are applicable to healthy people in the sense

of a functional approach for personal self-care to promote well-being and life satisfaction (*see e.g.*, Seligman et al., 2005). *Second*, positive psychology interventions are applicable to people suffering from psychiatric or somatic disorders in the sense of a therapeutic technique used by health care professionals, or the interventions are recommended for the patient's own action to support therapeutic effects (*see e.g.*, Chaves et al., 2017). A parallel movement towards the positive aspects of human beings have also been seen in the field of mental disabilities (Shogren et al., 2006), a life-long condition characterized by deficits in both intellectual and adaptive functioning causing multiple social disadvantages and impairments to health (Melville et al., 2015). At present, little is known about the potential of PPIs in the context of mental disabilities. Therefore, the present review aims at presenting the current state of knowledge about the application of positive psychology in the context of mental disabilities.

For years, there has been a debate about the terminology of mental disability and the historically most often used term mental retardation is regarded as pejorative and discriminatory leading globally to a terminological diversity. Both the World Health Organization (1996) and the American Psychiatric Association (2013) define mental disability, or intellectual disability, by three coexisting features. According to the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders, mental disability is characterized by deficits in (1) intellectual and (2) adaptive functioning (3) developed during the developmental period. Impairments in intellectual functioning involve mental abilities such as reasoning, planning and problem solving, and deficits in adaptive functioning involve skills such as communication skills, social skills, personal independence, work or school functioning, or participation in public life (Neise, 1994). Similarly, the American Association of Intellectual and Developmental Disabilities (AAIDD), formerly American Association of Mental Retardation, defines mental disability in terms of (1) low intelligence (2) occurring already during the developmental period, (3) accompanied by impairments in adaptive functioning (Neise, 1994). To be able to differentiate regarding the severity of mental disabilities, the World Health Organization (1996) defines specific thresholds in terms of the intelligence quotient (IQ) and thereby establishes a classification of mentally disabled individuals into four categories: mild, moderate, severe and most serious mental disability. For instance, an IQ of 50 to 69 indicates mild intellectual disabilities (WHO, 1996).

Additionally, a definition of mental disability by the German Council of Education in 1973 explicitly considers a person's individual need for assistance and states that someone is mentally handicapped if the person is as much impaired in his overall psychological development and ability to learn that he or she is likely to need lifelong social and educational help (Neise, 1994). However, despite impaired functioning on various domains, people with mental disability are not necessarily affected by a limited ability to experience pleasure or to feel at ease (Weingärtner, 2005). Even if mentally disabled people need lots of support in their daily functioning, through special assistance they were able to learn to lead a life that satisfies their needs and that broadly equals that of people without mental disabilities (Weingärtner, 2005).

In the past, research in the area of mental disability focused more on improving external conditions (e.g. services that are offered to those who are characterized by mental disabilities, such as day-care services) or physical conditions of mentally disabled individuals, which not necessarily result in long-lasting well-being (Rey, Extremera, Durán and Ortiz-Tall, 2013). To promote community inclusion, meaningful participation and quality of life in general, there have been a shift towards the importance of recognizing and reinforcing qualities and strengths in individuals with mental disabilities as well (Shogren et al., 2006). In this context, the quality of life (QoL) paradigm indicating an individual's well-being has increasingly been applied to individuals with mental disability (Schalock, 2004). Schalock (2004) describes eight core QoL domains with specific core QoL indicators identified by an analysis of scientific literature by Schalock and Verdugo (2002).

First, emotional well-being is described as an QoL domain and refers to specific factors contributing to personal well-being. The three most common indicators as identified by Schalock and Verdugo (2002) were contentment, self-concept (self-esteem, self-worth) and lack of stress. *Second*, interpersonal relations is a core QoL domain indicated by social interaction (social contact and social networks), relationships with family, peers and friends, and social support (e.g., emotional). Financial status, employment and housing is described as a *third* core QoL domain indicating mental well-being. Furthermore, personal development (education, personal competence and performance), physical well-being (health, daily activities in terms of self-care skills, and leisure in terms of hobbies and recreation), self-determination (autonomy, personal values and choices re options and preferences), social

inclusion (community roles, participation and integration, social support) and rights regarding human and legal matters such as respect and due process were central core domains within the quality of life paradigm (Schalock, 2004). From both a research and a practice-based perspective, as well as a policy-oriented perspective, the quality of life paradigm (QOL) aiming at cultivating positive behaviors, cognitions and feelings to enhance well-being increasingly influences the area of mental disability (So and Kauffman, 2011, Morisse Vandemaele, Claes, Claes and Vandavelde, 2013).

Furthermore, Seligmann (2011) developed a model (*PERMA*) to improve human well-being that quantifies happiness and consists of five measurable core elements of human well-being: *positive emotions* (a person's experience of positive feelings, pleasure, enjoyment and optimism), *engagement* (e.g., hobbies and a fulfilling work), *relationships* (positive and trustful relationships, intimacy), *meaning* (the utilization of personal strengths and competences to realize meaningfulness, finding a meaning in life) and *accomplishment* (having goals and important achievements).

In the course of time, various interventions have been developed (So and Kauffman, 2011). Schueller and Parks (2014) discussed the nature of positive psychology interventions (PPI) and stated, in accordance with Parks and Biswas-Diener (2013), that an intervention can only be deemed a PPI if an empirical basis exists that proved that the intervention successfully increases positive feelings, behaviors, and/or cognitions. Seligman's (2011) theoretical consideration of measurable elements of well-being (*PERMA*) provides a basis to investigate those interventions.

A meta-analysis by Sin and Lyubomirsky (2009) including 51 studies has shown a reduction of depressive symptoms and increased human well-being. Bolier et al. (2013) published a meta-analysis about the effectiveness of positive psychology interventions in the context of psychosocial problems and in the general public. The authors have shown that positive psychology interventions were able to significantly reduce depressive symptoms and enhance psychological and subjective well-being. Furthermore, Casellas-Grau, Font and Vives (2014) published a systematic review of positive psychology interventions in breast cancer, and therefore investigated their nature in the light of somatic disorders. Considering that the outcomes have been limited because of some methodological issues, the intervention showed enhanced well-being, optimism, hope and quality of life in breast cancer participants

(Casellas-Grau et al., 2014). Similarly, a recent systematic review and meta-analysis by Chakhssi, Kraiss, Sommers-Spijkerman and Bohlmeijer (2018) showed that PPIs were able to improve well-being, and reduces distress in populations with psychiatric and somatic disorders as well. Although systematic reviews covering PPIs with promising results have been found (e.g., Sin and Lyubomirsky, 2009; Bolier et al., 2013; Casellas-Grau, Font and Vives, 2014; Chakhssi, Kraiss, Sommers-Spijkerman and Bohlmeijer, 2018), no systematic review was found that addressed positive psychology interventions especially tailored to individuals with mental disabilities.

It is noticeable that many scientists (e.g., Seligman, 2011, Sin and Lyubomirsky, 2009, Westerhof et al., 2016; Bolier et al., 2013) as well as health care organizations (e.g., Avelijn) pay a great deal of attention to the science of positive psychology. Taken together, it may assumed that the science of positive psychology will be able to potentially enhance some QoL domains (e.g., emotional well-being and interpersonal relations) and therefore promote general quality of life and well-being. Therefore, the present review aimed at presenting the current state of knowledge about the application of positive psychology in the context of mental disabilities. In this regard, the focus has been on studies that investigated the effects of positive psychology intervention on human well-being. All in all, the purpose of the present review was (I) to give an overview of existing positive psychology interventions especially tailored to individuals with mild, moderate and severe mental disabilities, (II) to explore potential effects on mental well-being (III) taking account of methodological aspects of the studies.

Main Question:

By the current state of scientific knowledge, what is known about the practical application of positive psychology in the context of mild, moderate and severe mental disabilities?

Secondary Issues:

- (I) What kind of positive psychology interventions have been developed that have been especially tailored to individuals with mild and severe mental disabilities?

- *An Overview* -

- (II) What is known about the effects of those interventions on mental well-being?
- *An Exploration* -
- (III) What can be stated about the methodological quality of studies investigating those interventions? - *An Evaluation* -

Method

Literature Search Procedure

A systematic literature search was carried out using three scientific electronic databases (Scopus, Web of Science and PsycInfo) to search for studies published in scientific journals between January 1998 and April 29, 2018. To identify relevant literature, various keywords were combined describing the target group (mental* disab*, mental* retard*, intellectual* disab*, mental* handicap*, learning diab*, mental* deficiency, oligophrenia, special educational needs), the research field (positive psycholog*, applied positive psycholog*, positive emotion*, strength-based, solution-focused, well -being, happiness, satisfaction, life satisfaction, optimism), the application (intervention, therapy, training, exercise, program) and the evaluation (effect*, evaluation, outcome). The used keywords and its utilized combinations were annexed in the appendix A. Furthermore, the document type was a scientific journal article written in english, german or dutch language. After screening for eligibility, the bibliographies of each article included were scanned for additional articles that may have possibly been relevant for the present review.

Inclusion Criteria

First, a positive psychology intervention is defined in accordance with Sin and Lyubomirsky (2009) aiming to promote positive cognitions, positive feelings, or positive behavior. An important eligibility assessment criteria were the core elements (PERMA) of human well-being as introduced by Seligman (2011). The studies included were examined and categorized

based on the elements (I) *positive emotion*, (II) *engagement*, (III) *relationships*, (IV) *meaning*, (V) *accomplishment* (according to Seligman's PERMA model). *Second*, the positive psychology intervention have been especially tailored to people with mental disability and the study empirically assessed the effectiveness of the in the context of mental disability. *Third*, direct pre- and post-intervention measures of the dependent variables have been reported. A dependent variables were operationalized based on the elements of Seligman's PERMA model in terms of social, emotional and/or psychological well-being or related components (e.g. *happiness, hope, positive relationships, autonomy or social inclusion*).

Method of Analysis

First, the interventions found were categorized by Seligman's (2011) PERMA model indicating their primary therapeutical purpose: an intervention categorized by the element *positive emotions* aimed at an individuals experience of positive feelings, pleasure, enjoyment or optimism. Interventions covering the element *engagement* focuses on activities someone loves to do and where someone is good at, such as pursuing creative activities and hobbies. Interventions around *relationships* aims to improve positive and trustful relationships and to promote intimacy. *Meaning* represents the utilization of personal strengths and competences to realize meaningfulness, and finding a meaning in life. An intervention that contains the element of *accomplishment* focuses on having goals and important personal achievements.

Second, the studies have been explored in terms of their effectiveness on mental well-being. Table 2 summarizes the measurements and related outcome measures of each study included. Next, the (relevant) outcome measures have been organized and analyzed according to Seligman's five measurable core elements of human well-being (e.g., positive emotions [e.g., MHC-SF], relationships [SWEMWBS], meaning [PIL] and accomplishment [e.g., interviews]).

Third, six criteria based on a standardized quality assessment tool established by the Cochrane Collaboration was used to assess the methodological quality of the studies included (c.f., Bolier et al., 2013). The six criteria for methodological quality assessment were: (1) *randomization concealment*, (2) *comparability of baseline characteristics*, (3) *blinding*, (4) *power analysis and/or at least 50 participants in the analysis*, (5) *missing data* and (6)

completeness of follow up data. If applicable, randomization concealment concerns their adequacy to ensure a randomized controlled trial. Comparability of baseline characteristics evaluated if the comparability of the participants baseline characteristics were explicitly assessed at the beginning of the study, or if potential adjustments (appropriate covariates) have been applied to correct for imbalance at baseline. In most cases, blinding was not applicable. Completeness of follow-up data was met if at a max 50 % were lost. To handle missing data intention-to-treat analysis was used. The criteria were separately rated as 1 if the study meet this criterion and rated as 0 if the study dit not met the criterion (c.f., Bolier et al., 2013). Hence, the highest score is equal to six and the lowest score equals zero. According to Bolier et al. (2013) indicates a score of five or six a study of high quality, three and four indicates a moderate quality and zero, one or two connotes low methodological quality.

Results

Literature Search

In total, the search yielded 1558 references after duplicates removed. First, the records were reviewed through title (n = 1304) and abstract (n = 254) screening. 59 full-text records were assessed for eligibility and ultimately 11 records were included in the literature review. Figure 1 provides a flowchart illustrating the systematic literature search procedure.

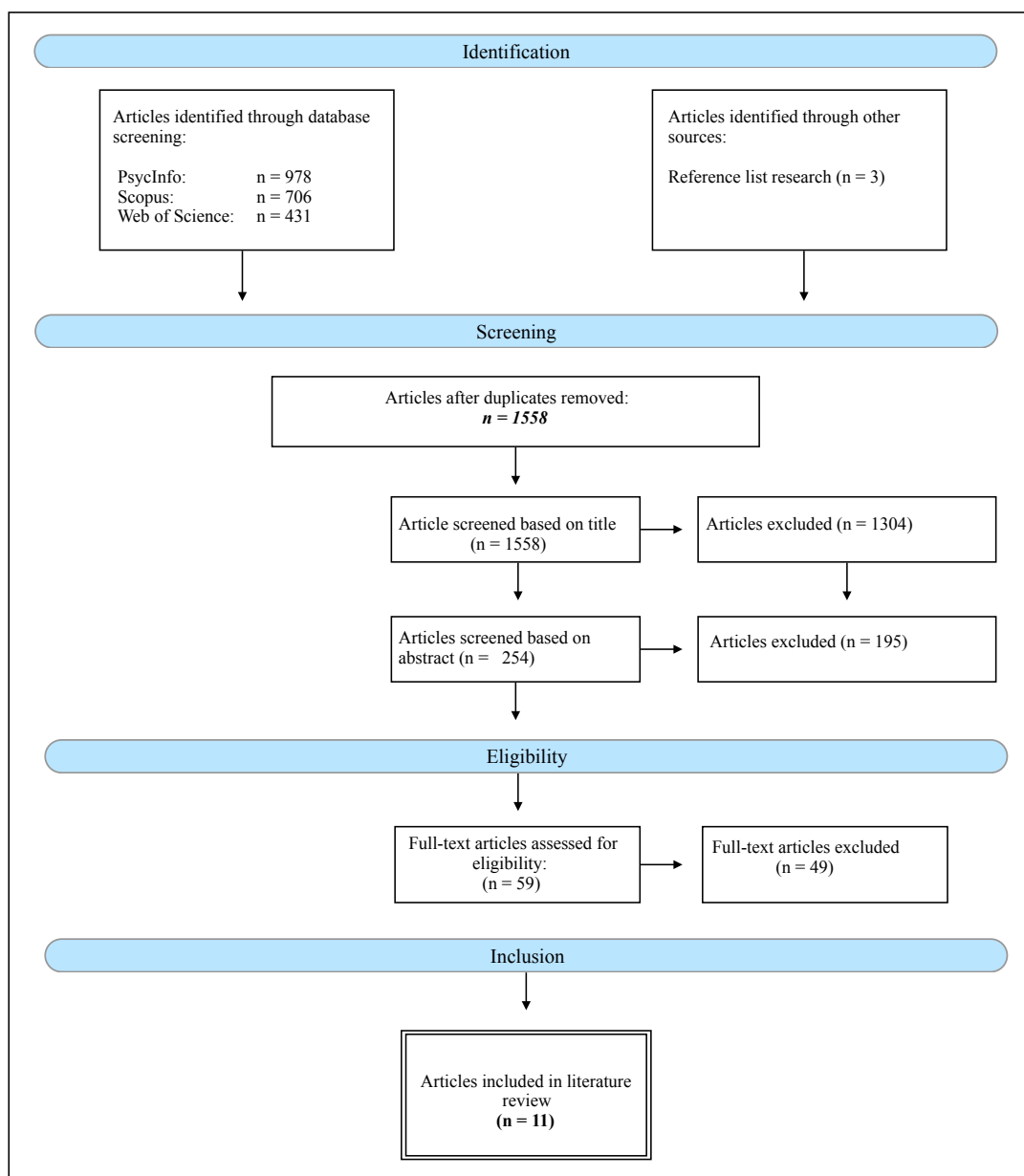


Figure 1: Literature Search Procedure

*Positive Psychology Interventions especially tailored to Individuals with Mental Disability**- An Overview -*

In total, 11 studies have been reported. Table 4 summarizes the interventions found and gives a brief description of the most important content-related characteristics.

Table 1: Positive Psychology Interventions - An Overview

<i>No.</i>	<i>Author(s) (PubY)</i>	<i>Intervention</i>	<i>Description/Characteristics</i>	<i>PP Component* (PERMA-model)</i>
1	Bai et al. (2014)	Life Story Work Program	Various psychosocial activities, e.g., excursions/making life story books including photographs; Provision of an accepting and caring atmosphere helping participants to express their feelings; incorporation of family members to collect photographs and informations to tell participant's life story; exploring of personal achievements, strengths and hobbies; doing things participants loved to do, e.g., visiting a museum; making field visits for collecting pictures and photographs of their current life/ making field visits to places where participants had grown up; focusing on significant past places, events and relationships; sharing their life story books with other participants and/or family members.	Positive Emotions , Engagement, Relationships, Meaning
2	Farmer et al. (2015)	Personal Strengths Program	8 - to 12 weeks program, guided individually, 1 h a week; assistance to identify and use personal strengths; development of goals, making plans to achieve those goals and planning of the monitoring of goal achievement; progress reflection; topics were character strengths, self-awareness, learning strengths, using feedback, negotiation skills as well as assertive communication and support and generalizing	Meaning, Accomplishment
3	Rosenstreich et al. (2015)	Hope Intervention	Group-based single-session hope-intervention workshop based on hope theory; encouraging students to develop academic goals and making plans to achieve those goals; identification of sources of agency; consideration of possible barriers in achieving those goals/pathways to overcome them	Meaning, Accomplishment
4	Roeden et al. (2014)	Solution-Focused Brief Therapy	Focusing on the individual's skills and empowerment; aiming to evoke desired behavior instead of minimizing problem behavior; consists of six sessions; exploring resources, competences and the problem and/or goal(s); e.g., goal-setting and/or coping question	Meaning, Accomplishment
5	Westerhof et al., 2016	Life-Story Intervention	Based on life-review therapy and narrative therapy; retrieving autobiographical events of different stages of life (Chen et al., 2017); support in assessing the life critically; support for the development of empowering life stories (Poole et al., 2009); roots in narrative approaches as founded by White and Epston (1990) assuming „that people have many skills, competencies, beliefs, values, commitments and abilities that will assist them to reduce the influence of problems in their lives” (White and Epston, 1990); the Life-Story Intervention „who am i?“ consists of seventeen sessions (group-based or individually) with each two hours; considered the whole life course: the history („who am i?“), the present („what are my strengths?“) and the future („what do i want to achieve?“).	Meaning, Accomplishment
6	Mahoney-Davies et al. (2016)	Five Ways to Well-being	Consists of five factors that are important to develop and maintain mental well-being. (1) Connecting with people, (2) being active, (3) noticing things around you, (4) keep learning and (5) giving to others are the five ways how people could improve their well-being; ten weeks, ten group sessions with two hours each; using various methods such as group discussion, role playing and activity-based learning, participants learned mindfulness practices, communications skills, explored problem-solving difficulties in relationships and increased their activity through discussions of advantages and setting goals.	Positive Emotions, Relationships
7	Malboeuf -Hurtubise et al. (2018)	Mindfulness Based Intervention	8 week group-based intervention; once a week for 1 h; additional practice at home required; consists of different mindfulness mediation techniques, such as mindful eating, body scan mediation, breathing mediation, walking mediation, sitting mediation and mediation through the five senses.	Positive Emotions

No.	Author(s) (PubY)	Intervention	Description/Characteristics	PP Component* (PERMA-model)
8	Van Puyenbroeck and Maes (2009)	Narrative Reminiscence Program	Designed for aging people with mental disabilities; group-based; 12 weeks, one session a week; Reminiscence is defined as „telling stories about personal past experiences or other memorable events“ and „refers to a process in which the past is not merely recalled, but also ‚relived‘“ (8); main purpose is to elicit positive remembrances instead of negative past experiences by using specific trigger objects; sessions focused on present topics, e.g. reflecting on the own person, music/parties or travels/holidays.	Positive Emotions
9	Barnet-Lopez et al. (2016)	Dance/Movement Therapy	Variant of expressive therapy; based on the guidelines for dance-movement therapy according to Marian Chace (1953); consists of 26 sessions in dance/movement therapy extended over a period of three months with two sessions a week for one hour each; activate the connection between body and mind to promote an individuals cognitive, physical and emotional integration aiming to enhance well-being	Positive Emotions
10	van Asselt-Goverts et al. (2018)	Social Network Intervention	Focused on both community participation and social relationships; semi-structured group training aiming at strengthening and expanding social networks of people based on Person Centered Planning (PCP); five basic goals: (1) promotion of involvement in the community, (2) the development of relationships with peers, (3) to provide opportunities for a dignified contribution in the society, (4) to increase self-determination and (5) to acquire skills (Wells & Sheehay, 2012); consisted of seven sessions (group-based) focusing on (1) talents and interests, (2) networks, (3) the neighborhood, (4) wishes and dreams, (5) making plans for a meeting (e.g., with a network member to think together about talents and interests), (6) an evaluation a the planned meeting and (7) an certification and evaluation of the training; consisted of exercises such as role playing and making a personal map of each topic covered, and making homework practices and presenting their personal map to other participants (promotion of social interactions)	Relationships
11	McConne ll et al. (2008)	Australian Supported Learning Program	Group-based programme (8–10 weeks with 2 h per session) aimed to improve psychological wellbeing of mothers with learning difficulties through strengthening social relationships; topics of the sessions include, for instance, ‘places I know and love’ and ‘helping out in my community’	Relationships

* Core elements of human well-being according to Seligman’s PERMA model

The first element of Seligman’s PERMA model - *positive emotion* - is prevalent by five interventions (1, 6, 7, 8, 9). The (primary) purpose of the interventions was grounded on the hedonic perspective on human well-being and was to enhance well-being through focusing on the experience of positive emotions. For this purpose, techniques of mindfulness mediation (6,7) or narrative reminiscence techniques (8) were used, or the intervention facilitated doing things someone loves to do (1). Reminiscence techniques have been applied to elicit positive remembrances instead of negative past experiences by using specific trigger objects within a narrative reminiscence program (8). Furthermore, techniques of mindfulness mediation such as mindful eating, body scan mediation, breathing mediation, walking mediation, sitting mediation and mediation through the five senses were applied to actively noticing things around you (6, 7). A variant of expressive therapy, dance/movement therapy (DMT), was used to activate the connection between body and mind to promote an individuals cognitive,

physical and emotional integration aiming to enhance well-being (9). Other approaches to promote positive emotions were doing things someone loves to do, for instance visiting a museum or going to a zoological garden (1) or focusing and encouraging altruistic behavior in the sense of giving to other, for instance (6).

Relationships played a prominent role in four interventions (1, 6, 10, 11). The interventions aimed at strengthening and expanding social networks and used various methods such as role playing, activity-based learning (6, 10) and group discussions (6) to improve social skills. Moreover, exploring problem-solving difficulties in relationships (6) and making plans for a meeting, for example with a network member to think together about personal talents and interests (10), training of communications skills and increasing social activity through discussions of advantages of being socially active and setting goals (6), and various psychosocial activities such as excursions (1), were important pillars in strengthening and expanding social networks. Participants were also animated to socialize through sharing life story books with other participants and/or family members that were developed in the course of a program (1).

In view of reaching a life of meaningfulness, five interventions focused on the identification and usage of personal strengths, skills, abilities, competences and resources (1, 2, 3, 4, 5 [meaning]). Also personal achievements and sources of agency were central topics (1, 3). The aim of the interventions were to use personal strengths to achieve specific goals (2, 3, 4 [accomplishment]) and thinking about what someone wants to achieve in life (5 [meaning]). To reach those goals, goal setting, making plans to achieve those goals and the monitoring of goal achievement (2, 3 [accomplishment]), as well as thinking about possible barriers in achieving those goals and thinking about pathways to overcome possible barriers were central parts of an intervention (4 [accomplishment]). The interventions mainly focused on the utilization of personal strengths and competences to realize meaningfulness, and on having goals or important personal achievements (1, 2, 3, 4, 5 [both meaning and accomplishment]). Interventions covering *engagement* focuses on activities someone loves to do and where someone is good at, such as pursuing creative activities and hobbies [1].

Conclusion: The most prevalent elements (each 5 times) of the interventions have been positive emotions (in the sense of experiencing positive emotions regularly) and meaningfulness (in the sense of using ones strengths). Least of all applied was the concept of

engagement. The interventions used various approaches and techniques to promote well-being. For instance, collecting photographs and making field visits to places where participants had grown up have been central elements in the context of life-story interventions. Exploring personal achievements, strengths, hobbies, talents, interests and hobbies, the development of goals and making plans to achieve those goals, mindfulness mediation techniques such as mindful eating and body scan mediation, principles of dance/movement therapy, and hope enhancement have been other central approaches used by the interventions. By using group discussions and role playing, or making plans for a meeting with network members to think together about personal talents and interests, for instance, different approaches have been interconnected.

Potential Effects on Well-Being - An Exploration

Positive Emotions: In total, although improvement of positive emotions have not been always the primary objective, 7 of 11 interventions [4, 5, 6, 7, 8, 9, 10] were explored regarding their effects on emotional well-being indicating the experienced degree of positive emotions (e.g. pleasure) and the global positive evaluation of one's own life (Magyar-Moe et al., 2015).

Five interventions have shown significant positive changes in emotional well-being (4, 5, 7, 9, 10). The life-story intervention by Westerhof et al. (2016) improved significantly participants' emotional well-being ($p = .005$) and increased their overall satisfaction with life ($p < .001$) [5]. Similarly, the intervention based on dance/movement therapy results in higher levels of emotional well-being ($p = .0007$) indicating an increased experience of positive emotions and a global positive evaluation of one's own life [9]. The social network intervention with its primary objective to enhance and to expand social networks also resulted in increased feelings of satisfaction ($p \leq .05$) and decreased feelings of loneliness ($p \leq .05$) [10]. Focusing on an individual's skills and empowerment based on solution-focused therapy showed significant positive effects on feelings of social optimism and autonomy ($p < .01$). No significant positive effects in terms of positive emotions have been found by mindfulness mediation [6] and narrative reminiscence techniques [8].

Engagement: One studies have been found investigating the effect of activities someone loves to do and where someone is good at, such as pursuing creative activities and

hobbies, indicating a potential to prevent negative changes in mood, pleasure and interests (not significant).

Relationships: Interventions aiming to improve positive and trustful relationships and to promote intimacy increased social skills, enhanced social networks in terms of more frequent social contact and stronger ties, and participation in leisure activities and community participation, e.g. in the sense of neighborhood contacts (*for all* $p \leq .05$) [10]. Furthermore, a life-story work program enhanced the sense of community-connectedness ($p = .01$) [1].

Meaning: Exploring resources, competences and the specific problems in life and/or goal(s) showed a significant improvement on quality of life and psychological functioning and decreased maladaptive behavior ($p < .01$) [4].

Accomplishment: On the other hand, developing goals, making plans to achieve those goals [2, 3], planning of the monitoring of goal achievement [2] and the identification of sources of agency and the consideration of possible barriers in achieving those goals as well well pathways to overcome them [3] have not shown any effect in the sense of enhanced well-being [2, 3].

Table 2: Outcome Measures and Results

<i>No.</i>	<i>Author(s) (PubY*)</i>	<i>PERMA Model Seligman (Element)</i>	<i>Relevant Outcome Measures</i>	<i>Results</i>
1	Bai et al. (2014)	Positive Emotions, Engagement, Relationships, Meaning	Vineland Adaptive Behavior Scales (Vineland-II), Personal Well-being Index-ID (PWI- ID), Mood, Interest and Pleasure Questionnaire (MIPQ)	Indicating effect in preventing negative changes in mood, pleasure and interests (not significant!), improved socializing skills ($p = .04$), no effect on PWI ($p = .96$), significant difference in community-connectedness ($p = 0.01$)
2	Farmer et al. (2015)	Meaning, Accomplishment	Self-Determination Student Scale (SDSS), Interviews	No significant effect ($p = n/s$)*
3	Rosenstreich et al. (2015)	Meaning, Accomplishment	Subjective Happiness Scale (SHS), Life Orientation Test (LOT-R) [dispositional optimism], Lonliness Scale	Higher levels of hope and lower levels of loneliness immediately (after 1 week), after a month, levels of hope and loneliness returned to their original level, optimism scores initially increased, but no unique pattern revealed ($p = n/s$)
4	Roeden et al. (2014)	Meaning, Accomplishment	IDQOL (psychological and social functioning), POS (autonomy and social optimism)	Significant improvement on quality of life and psychological functioning and decreases in maladaptive behavior ($p < 0.01$), no statistically significant changes in social functioning
5	Beernink et al (2017) [Westerhof et al., 2016]	Meaning, Accomplishment	Mental Health Continuum-Short Form (MHC-SF), Outcome Questionnaire (OQ-45), Satisfaction With Life Scale (SWLS), Purpose in Life (PIL) Scale	Reduced experienced health problems ($p = .001$) Increase in mental well-being ($p = .003$); emotional well-being ($p = .005$), psychological well-being ($p = .002$), no significant effect on social well-being ($p = .303$), Increase in satisfaction with life ($p < .001$)

<i>No.</i>	<i>Author(s) (PubY*)</i>	<i>PERMA Model Seligman (Element)</i>	<i>Relevant Outcome Measures</i>	<i>Results</i>
6	Mahoney-Davies et al. (2016)	Positive Emotions, Relationships	RSE ^d , SWEMWBS ^e , „Well-Being Outcome Scale“ (designed by researcher), Mindfulness Questions	No evidence that running a Five Ways to Well-being group with people with learning disabilities will improve their well-being (p = n/s)
7	Malboeuf-Hurtubise et al. (2018)	Positive Emotions	Need Satisfaction, Autonomy, Competence, Relatedness (29-item questionnaire, n/s)	Negative effects on participant's needs satisfaction (Wilks' $\lambda = .65$, $F(1,12) = 6.85$, $p = .02$) and feelings of competence (Wilks' $\lambda = .66$, $F(1,13) = 6.73$, $p = 0.02$)
8	Van Puyenbroeck & Maes (2009)	Positive Emotions	IDQOL (life satisfaction), PSPC (perceived self-competence), MIPQ (mood, interest and pleasure)	No significant difference on life satisfaction ($p = 0.15$) and perceived self-competence ($p = 0.21$) after the intervention
9	Barnet-Lopez et al. (2016)	Positive Emotions	Human Figure Drawing test (HFD) - emotional well-being	Significant improvement in emotional well-being ($p = .0007$)
10	van Asselt-Goverts et al. (2018)	Relationships	MSNA-ID Loneliness Scale BPNSFS RSE (Rosenberg self-esteem scale)	Significantly more feelings of competence, significant changes in autonomy, participation in leisure activities and education increased ($p \leq .05$)
11	McConnell et al. (2008)	Relationships	Tilden Interpersonal Relationships Inventory (IPRI) – Short Form Scales of Mastery and Constraints (psychological empowerment), Depression, Anxiety and Stress Scales (psychological distress)	Positive effects on mother's social relationships and psychological well-being ($p = n/s$)

* not specified

Conclusion: An intervention's primary purpose (as means to an end) was to influence an element of Seligman's PERMA model in a positive manner, e.g., improving the experience of positive emotions. Moreover, the interventions did possibly not only affect its primary targeted element, but also other elements more indirectly, e.g., positive and trustful relationships may cause the experience of more positive emotions. Hence, it is important to consider the reciprocal dynamic between the different elements of the PERMA model and to discuss the effects on well-being in light of the PERMA elements in their entirety. Figure 2 illustrates exemplarily of the dynamical interaction within the PERMA elements.

Taken together, the findings provide scientific evidence that positive psychology interventions were able to significantly enhance well-being depending on intervention method type (e.g., life-story or mindfulness). Additionally, the findings provide evidence that the PERMA elements of the construct of human well-being strongly interact with one another.

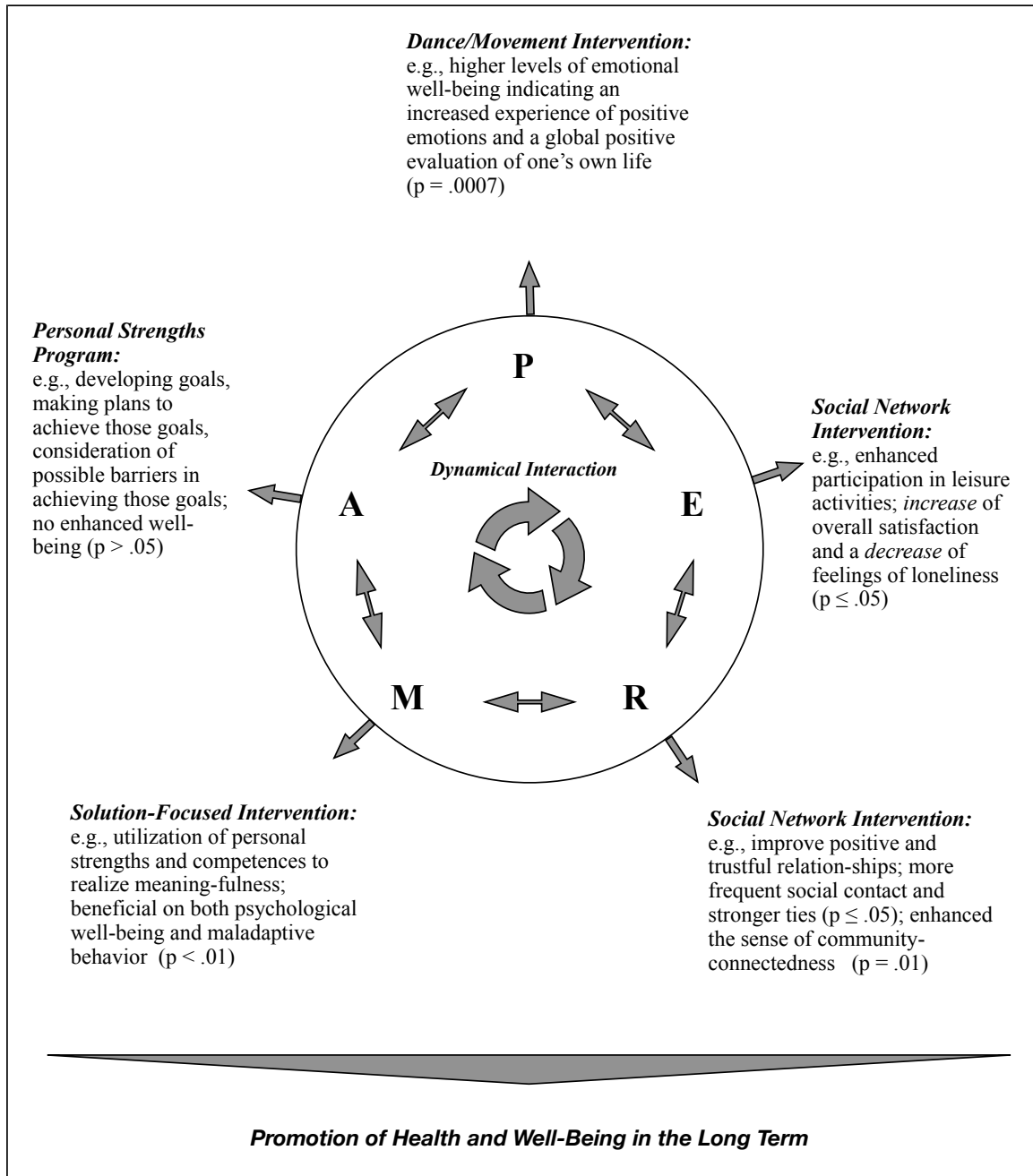


Figure 2: Dynamical interaction of the PERMA elements

Methodological Quality - Quality Assessment according to the Cochrane Collaboration

The quality score of the studies ranged from 1 to 5 ($M = 2.9$). No study got the highest possible score (6) and met all quality criteria. Four studies were rated as low, 5 studies were of moderate quality and one study was rated as of high methodological quality. The average number of participants in the studies was rather small. Three of ten studies scored positive on

the quality criterion (4). Most frequently scored positive was baseline comparability (10/11 studies). Least often reported was blinding (1/11). Intention-to-treat analysis (3/11) and randomization concealment (4/11) were rarely conducted.

Table 3: Quality Assessment based on Cochrane Collaboration

No.	Study	1	2	3	4	5	6	Total	Methodological Quality
1	Bai et al. (2014)	0	1	0	0	0	1	2	Low
2	Farmer et al. (2015)	0	1	0	0	0	0	1	Low
3	Rosenstreich et al. (2015)	1	1	0	1	1	1	5	High
4	Roeden et al. (2014)	0	1	0	0	0	1	2	Low
5	Westerhof et al., 2016	1	1	0	0	0	1	3	Moderate
6	Mahoney-Davies et al. (2016)	0	1	0	0	0	1	2	Low
7	Malboeuf-Hurtubise et al. (2018)	0	1	0	1	1	1	4	Moderate
8	Van Puyenbroeck & Maes (2009)	1	0	1	0	0	1	3	Moderate
9	Barnet-Lopez et al. (2016)	1	1	0	1	0	1	4	Moderate
10	van Asselt-Goverts et al. (2018)	0	1	0	0	1	1	3	Moderate
11	McConnell et al. (2008)	0	1	0	0	0	1	2	Low

Notes:

- (1) randomization concealment
- (2) comparability of baseline characteristics
- (3) blinding,
- (4) power analysis and/or at least 50 participants in the analysis
- (5) missing data
- (6) completeness of follow up data.

0 = absent or unclear; 1 = present

Conclusion: Although the quality criteria as used by Bolier et al. (2013) have been considered to be an appropriate tool to assess the methodological quality, the explanatory power should be carefully considered because of some limitations. It was conspicuous that the number of participants was rather small (8/11) and, corollary, that most of the studies (10/11) did not applied blinding to the treatment groups (if any clustering have ever been applied). To reach the highest score possible (5 or 6 positively rated categories) and to be rated as of high quality appeared to be nearly unrealistic, even if the studies have been well-wrought regarding methodological issues. The results of the methodological quality assessment should be considered carefully and the findings of the studies may be of high practical utilization value despite low methodological quality.

Discussion and Conclusion

The present literature review presents few interventions developed within the framework of positive psychology that have been especially tailored to individuals with mental disabilities, and explored their potential effects on human well-being. A central aspect of positive psychology are the elements of Seligman's theoretical model of happiness and well-being indicated by the acronym PERMA. Maximizing each of the five elements (PERMA) will make a contribution to make life most worth living and to reach a life of happiness, meaning and fulfillment (Seligman, 2011). In total, 11 interventions have been reported showing that the theoretical knowledge about well-being operationalized by the PERMA model have also been applicable for mentally disabled individuals.

Most interventions focused on positive emotions in the sense of experiencing pleasure and positive emotions regularly, and the fewest used personal strengths in the sense of being involved in activities where someone is good at or doing something someone loves to do. Some interventions combined different approaches and techniques to enhance well-being. For instance, an intervention integrated making personal life-story books with exploring personal achievements, strengths and hobbies, and tried to promote social contact by various psychosocial activities (e.g., excursions) and by sharing life story books with other participants and/or family members. Conspicuously, the interventions promote well-being mainly in the sense of the hedonic perspective on human well-being, whereas the eudaimonic perspective faded more into the background.

Although many studies reported positive effects on well-being and related constructs, some studies reported no positive effect as well. An intervention that focused on personal strengths and talents, for instance, showed no positive effect. Reflecting on personal strengths is necessarily accompanied by thinking about things someone is not good at as well, what might be possibly counterproductive in case of individuals who are already affected by various limitations on several domains. Therefore, individuals characterized by various impairments in their daily lives may possibly become more aware of their shortcomings instead of their qualities.

A mixed picture regarding positive effects on well-being have also been seen in interventions using approaches based on life-stories. Interestingly, one study found positive effects on well-being, one study reported evidence to potentially prevent negative changes in

mood, pleasure and interests, and one study found no enhanced well-being. Although all studies focused on an individual's personal life-story, they all aimed at different elements (e.g., positive emotions and meaning) of well-being in a variety of ways (e.g., collecting photographs or narrative reminiscence techniques). The results showed that probably not only the method type at hand (e.g., life-stories) will be crucial for the effects on well-being, but also the kind of realization (e.g. narrative reminiscence) might play an important role.

A similar phenomena can be observed in studies that focused on strengthening relationships. Two studies that focused solely on strengthening relationships reported positive effects on well-being, whereas a study that additionally included parts of mindfulness mediation techniques to enhance positive emotions showed no positive effects on well-being. These findings may be evidence for that enhancing social networks will be able to enhance well-being, but that other factors (e.g. mindfulness mediation) may possibly restrict those positive effects. This consideration may be underpinned through the findings of a study that investigated the effects of an intervention solely based on mindfulness mediation techniques (Malboeuf-Hurtubise et al., 2018).

In contrast to other studies reporting positive effects of mindfulness mediation techniques on dispositional measures of needs satisfaction (e.g., Brown and Ryan, 2003), the study reported in the present review showed a reversed association between mindfulness and basic psychological need satisfaction and feelings of competence. The authors argued that the more people with learning disabilities became mindful, the more aware they will become of their limitations influencing directly their feelings of autonomy and competences (Malboeuf-Hurtubise et al., 2018). The mindfulness based intervention improved self-evaluation skills of individuals with severe learning disabilities, and may as a consequence thereof increase the awareness of shortcomings (Malboeuf-Hurtubise et al., 2018). These considerations were similar to those in case of interventions focusing on personal strengths. Reflecting on personal strengths requires, as a logical consequence, reflecting on personal weaknesses as well. Even if unintentional, thinking about personal strengths may cause being aware of personal shortcomings as well, which might be counterproductive in the context of mental disabilities .

These findings allows to conjecture a certain interdependence between the PERMA elements in terms of a dynamical interaction. The PERMA elements are a theoretical consideration of measurable core elements of the construct of human well-being, which

consequently postulates that the elements were influenceable in certain ways by various factors. Positive psychology is a science in the context of human beings, and human beings are exposed to countless factors influencing them in many ways. By analogy, a positive psychology intervention, considered as a factor that aims to influence a measurable core element of the human construct of well-being (e.g., positive emotions), seems to influence not only one of the elements of human well-being. The process of influence have not necessarily be of direct nature, but may be indirectly as well. Additionally, the manner to realize or to implement the purpose of an intervention (e.g. improving positive emotions through mindfulness techniques) seems to deserve special attention.

Therefore, an interesting finding of the present review is the dynamical interaction between the PERMA elements and the interventions. Even if an intervention's primary purpose was to promote positive and trustful relationships, for instance, the intervention did not necessarily affect only relationships positively, but also enhanced the experience of positive emotions and therefore affected other PERMA elements as well, for instance, or the intervention itself used several approaches aiming at different elements that gives rise to a certain interdependence.

Taken as a whole, positive psychology interventions in the context of mental disabilities seems to potentially promote well-being by focusing on the PERMA elements using various positive psychological approaches, and thereby affecting positively some of the quality of life domains (QoL) according to Schalock (2004). This finding is in line with earlier review articles showing on other populations that positive psychology interventions were able to significantly enhance human well-being (e.g., Bolier et al., 2013; Sin & Lyubomirsky, 2009; Casellas-Grau et al., 2014). The present work shows that positive psychology seems to have potential validity in the sense of a beneficial scientific approach that will be able to promote human well-being of mentally disabled individuals as well.

Moreover, the unique characteristics and needs of individuals with mental disabilities have also been reflected in the findings of the review. The fundamental thoughts of the science of positive psychology, such as thinking about personal strengths and being mindful, may be possibly not valid for individuals with mental disabilities because of their special personal circumstances. Thinking about personal strengths may cause being aware of personal shortcomings as well, and also being mindful possibly gives rise to become more aware of

personal limitations, for instance. On the other hand, social networks of individuals with mental disabilities were small and restricted in several ways, and social inclusion is an important factor regarding well-being (van Asselt et al., 2018). Interventions focusing on enhancing social networks and therefore affecting the special needs of mentally disabled people seems to potentially enhance well-being.

Because of the findings of the review and the specific needs and characteristics in case of mental disabilities, the validity of PPIs concerning mild, moderate and severe mental disabilities appears to be important to discuss.

Mild, Moderate and Severe Mental Disabilities

It seems that there is currently no clear scientific differentiated answer to the question of the validity of interventions for people with mild, moderate and severe mental disabilities, although there will be clear differences. It may be principally assumed that the application of positive psychology interventions will be appropriate for both individuals characterized by mild, moderate as well as severe mentally disabled individuals. The results of the present review have shown that making a differentiation regarding mild, moderate and severe disability will be principally possible. For instance, an individual with mild intellectual disabilities will be more likely to be in a position to reflect upon personal qualities in case of an intervention that focused on personal strengths as, in contrast, someone characterized by severe intellectual disabilities.

Positive psychology interventions appears to be principally applicable to both mild, moderate and severe mentally disabled people. However, the application of the interventions requires special adaptations appropriate for the cognitive and physical abilities associated with the severity of the intellectual disabilities. For instance, individuals characterized by mild mental disabilities, who were not impaired in their physical functioning, will be able to participate actively in an intervention based on dance/movement therapy. As a consequence, they will potentially experience feelings of positivity and enhanced emotional well-being. In contrast, individuals with severe mental disabilities who were impaired in their physical functioning were possibly not able to participate actively. It does not necessarily mean that they do not experience feelings of positivity when participating in the intervention, but they

might experience positive emotions in a another way, e.g. by simply watching somebody doing movement therapy or by doing movements within their capabilities.

Hence, a holistic view on mental disabilities (based on IQ and need for assistance) provides an approach to estimate the extent to which positive psychology interventions might be useful. However, no studies covering a differentiated investigation of the applicability of positive psychology interventions in the context of mild, moderate and/or severe mental disabilities have been found.

Limitations and Implications for Further Research

First, some writings describing approaches that may be used to enhance well-being have been excluded from the present review. Due to the fact that those writings did not meet the high requirements of a scientific effect-study, some worthwhile ideas and approaches have possibly not been mentioned in this review. Although the present review have shown that many approaches exist that were able to enhance well-being, further research work is necessary continuing exploring existing positive psychology interventions.

Second, the present review reported studies that focused on the effectiveness of interventions in terms of enhanced well-being using statistical significance. Consequently, the present review focused on studies using statistical methods trying to quantify subjective phenomena. However, a quantitative approach in terms of an effect-study as used by the studies included might possibly not capture the full complexity of human perceptions or experiences (Lancaster University, 2016), which appears to be highly relevant within a science that mainly focused on emotional states of human beings (mental well-being). Therefore, a limitation of the present review may be that no qualitative approaches have been considered that might be useful and helpful in exploring the emotions and perceptions of specific phenomena as experienced by individuals in more detail (Khankeh et al., 2015). As a consequence, valuable insights into the subjective experience of an intervention, which might be possible interesting and relevant in terms of a practical issue for further developments of interventions, for instance, have not been captured in this review.

Positive psychology is a science about human beings, and positive psychology interventions allows to transfer (and to apply) their theoretical knowledge on a human level.

Every individual is a unique entity characterized by subjectiveness in many respects - in the sense of the experience of feelings and emotions, and especially in the sense of a state of human well-being. The nature of human beings in terms of their subjective experience of feelings and states of well-being requires approaches that catch these subjectivity as well.

The limitations raises the question of the practical utilization of the present study, which depends to a certain extent on the main question at hand. The main purpose of the present review was to present the current state of knowledge about the application of positive psychology interventions in the context of mental disabilities. In this regard, the focus have been on studies that investigated the effects of positive psychology intervention on human well-being. Even if there are studies describing approaches that may be useful to enhance well-being, those studies give no evidence about the practical utility in terms of their effectiveness. Scientifically based effect studies and qualitative case studies were needed in order to be able to make statements regarding the central mission of positive psychology - the promotion of well-being. Positive psychology is a practical science as well, and practical sciences requires practical evaluations, not just theoretical ideas, to live up to their principles.

All in all, the findings of the present review provides scientific evidence for a significant potential of positive psychology to improve well-being of individuals with mental disabilities. Previous reviews (e.g., Bolier et al., 2013) reported positive effects of PPIs on well-being, and the present review showed that the same is true for PPIs especially tailored to individuals with mental disabilities, although other emphases (such as improving social networks instead of focusing on personal strength) were important to catch the specific needs of mentally disabled individuals. Avelijn is still working successfully with mentally disabled individuals inspired by the knowledge of positive psychology, a quite young scientific discipline, and provides excellent opportunities for an ongoing development of research within this field in the long term.

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APPENDIX

Scopus:

- #1 (TITLE-ABS-KEY(("Mental* disab*") OR ("Intellectual* disab*") OR ("mental* retard*") OR ("mental* handicap") OR ("learning disab*") OR ("special educational needs") OR ("mental* deficiency") OR (oligophrenia))) AND DOCTYPE (ar) AND PUBYEAR > 1997 AND LANGUAGE (english) OR LANGUAGE (german) OR LANGUAGE (dutch)
- #2 (TITLE-ABS-KEY (("positive psycholog*") OR ("applied positive psycholog*") OR ("positive emotion*") OR ("strength-based") OR ("strength based") OR ("solution-focused") OR ("solution focused") OR ("well being") OR (well-being) OR (happiness) OR (satisfaction) OR ("life satisfaction") OR (optimism)))) AND DOCTYPE (ar) AND PUBYEAR > 1997 AND LANGUAGE (english) OR LANGUAGE (german) OR LANGUAGE (dutch)
- #3 (TITLE-ABS-KEY ((intervention) OR (treatment) OR (therapy) OR (program) OR (training) OR (exercise))) AND DOCTYPE (ar) AND PUBYEAR > 1997 AND LANGUAGE (english) OR LANGUAGE (german) OR LANGUAGE (dutch)
- #4 (TITLE-ABS-KEY ((effec*) OR (outcome) OR (evaluation)))) AND DOCTYPE (ar) AND PUBYEAR > 1997 AND LANGUAGE (english) OR LANGUAGE (german) OR LANGUAGE (dutch)
- #5 #1 AND #2
= 1475 article
- #6 #1 AND #2 AND #3
= **706 article**
- #7 #1 AND #2 AND #3 AND #4
= **442 article**

Web of Science

- #1 (TS=("mental disab*") OR TS=("Intellectual* disab*") OR TS=(mental* retard*) OR TS=("mental* handicap") OR TS=(learning disab*) OR TS=("special educational needs") OR TS=("mental* deficiency") OR TS=(oligophrenia)) AND LANGUAGE: (English OR Dutch OR German) AND DOCUMENT TYPES: (Article)
- #2 (TS=("positive psycholog*") OR TS=("applied positive psycholog*") OR TS=("strength-based") OR TS=("strength based") OR TS=("solution-focused") OR TS=("solution focused") OR TS=("well-being") OR TS=("well being") OR TS=(satisfaction) OR TS=("life satisfaction")) AND LANGUAGE: (English OR Dutch OR German) AND DOCUMENT TYPES: (Article)
- #3 (TS=(intervention) OR TS=(treatment) OR TS=(therapy) OR TS=(program) OR TS=(training) OR TS=(exercise)) AND LANGUAGE: (English OR Dutch OR German) AND DOCUMENT TYPES: (Article)
- #4 (TS=(effec*) OR TS=(outcome) OR TS=(evaluation)) AND LANGUAGE: (English OR Dutch OR German) AND DOCUMENT TYPES: (Article)
- #5 #1 AND #2
= 908 article
- #6 #1 AND #2 AND #3
= **431 article**
- #7 #1 AND #2 AND #3 AND #4
= **258 article**

PsycInfo

Limiters: Publication Year 1997 - 2018

Language: English, German and Dutch

- #1 TX "mental disab*" OR TX "intelectual disab*" OR TX "mental* retard*" OR TX "mental* handicap" OR TX "learning disab*" OR TX "special educational needs" OR TX „mental* deficiency"
- #2 TX "positive psycholog*" OR TX "applied positive psycholog*" OR TX "positive emotion*" OR TX "strength-based" OR TX "solution-focused" OR TX well-being OR TX satisfaction OR TX "life satisfaction" OR TX happiness
- #3 TX intervention OR TX treatment OR TX therapy OR TX program OR TX training OR TX exercise
- #4 TX effect* OR TX outcome OR TX evaluation
- #5 #1 AND #2
= **1735 article**
- #6 #1 AND #2 AND #3
= **978 article**
- #7 #1 AND #2 AND #3 AND #4
= **593 article**