



Review

Conceptualising and measuring the well-being of people with psychosis: Systematic review and narrative synthesis



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ABSTRACT

Well-being has become a prominent term in the political arena in recent years. However, in research the concept and use of well-being has been unclear, especially in the context of severe mental illness such as psychosis. This systematic review aims to characterise the evidence base relating to well-being in people with psychosis, by reviewing how well-being is measured, developing a new conceptual framework, and summarising empirical evaluations of psychosocial interventions to improve well-being. We conducted a systematic review and narrative synthesis of controlled trials of interventions investigating well-being in people with psychosis. The 28 studies meeting the inclusion criteria used 20 different measures of well-being. Five dimensions of well-being emerged: non-observable, observable, proximal, distal, and self-defined. Interventions to improve well-being vary widely. The investigated interventions have been targeted at non-observable, observable and proximal levels, while evaluation measures span all five dimensions. This review offers an evidence based conceptual framework of well-being which can provide an empirical basis for organising future well-being research in psychosis. The review also shows that the evidence base for interventions is small and methodologically weak. Recommendations are made for choosing well-being measures for future research.

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Introduction

The term well-being has become popular in the political arena in recent years. Extensive work has been published on well-being and its determinants in the general population. In the UK the most comprehensive and prominent approach was taken by the Office of National Statistics (ONS, 2012). Overall, at least four academic phases of well-being conceptualisation and measurement can be identified. Economic concepts frame well-being in terms of national wealth, social determinants, development and general quality of life. Medical concepts of well-being frame it in relation to disorder and illness, i.e. health related quality of life. Psychological concepts view well-being in terms of subjective and mental

concepts, ranging from positive affect to life span development and self actualisation. Finally, integrative concepts are evolving and informed by economic, medical, and psychological phases. Throughout these phases, the notion of well-being has shifted from a collectivist concept with objective measures, to being conceived in individualistic terms, with subjective measures and a distinct focus on positive psychology and recovery research (Schrank, Riches, Coggins, Tylee, & Slade, submitted for publication). The latest ONS approach to national general population well-being reflects an economic perspective with an additional strong emphasis on subjective indicators of well-being, and views well-being in terms of three broad domains: individual well-being; factors directly affecting individual well-being; and more contextual domains (ONS, 2012).

The transition from objectivity to subjectivity has led to well-being becoming a key concept in mental health. In particular, well-being is also a central component of recovery from mental illness (Slade, 2009). Its importance is further supported by research showing an association between well-being and improved functioning, increased resilience and life satisfaction (Fredrickson &

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Joiner, 2002), and suggesting its protective value against the onset or re-occurrence of mental illness (Schueller & Parks, 2012).

So far, well-being research has focused on a variety of groups, including the general population across the life span and countries (Hatch, Harvey, & Maughan, 2010; Jin, Wen, Fan, & Wang, 2012; Liu, Dupre, Gu, Mair, & Chen, 2012), and groups with various disorders such as cancer (Schwarzer, Luszczynska, Boehmer, Taubert, & Knoll, 2006), traumatic injury (Kendall & Terry, 2009), or HIV/AIDS (Mak et al., 2007). Recently there have been calls for a stronger focus on well-being within psychiatry (Cloninger, 2006), especially in the context of recovery (Resnick & Rosenheck, 2006). Despite the increasing research focus on well-being, a consensus definition of well-being is missing (Schrank et al., submitted for publication). In the scientific literature the concept of well-being is differently and often only vaguely defined and empirical evidence is fragmented, especially when it comes to people with severe mental illness, such as psychosis (Wissing & van Eeden, 2002).

The aim of this study is to characterise the evidence base relating to well-being in people with psychosis to (1) understand how well-being is measured in high quality research studies involving people with psychosis, (2) develop an organising conceptual framework for well-being as used in these studies, and (3) summarise the empirical evidence on psychosocial interventions aimed at improving well-being in people with psychosis.

Method

Eligibility criteria

We included randomised and non randomised intervention studies investigating the effects of intervention compared with control on service users' well-being as primary or secondary outcome, available in full-text in English or German Language.

Studies were included if they used definitions of well-being from psychological and mental health research, i.e. those assuming at least a degree of subjectivity in the concept, ascertained by (i) standardised outcome measures of overall well-being according to any psychological and psychiatric definitions; (ii) single-question assessments of personal well-being; or (iii) scales containing a well-being factor or well-being subscale. We excluded studies that defined well-being: (i) as a solely economic construct (monetary measures and social indicators); (ii) as a solely physical construct (e.g. fitness, weight, heart rate or blood pressure); (iii) as lack of relapse or hospitalisation (i.e. "staying well"); (iv) as lack of psychiatric symptoms; and which used (v) non-standardised combinations of various scales purporting to represent well-being.

Inclusion criteria for participants were (i) aged 16–65 years; (ii) past or present diagnosis of a psychotic illness based on ICD-10 or DSM-IV or at least 70% in a mixed diagnosis sample (interpreted to be over-inclusive when the diagnostic description was unclear), and (iii) use or have used mental health services. This work was exempt from ethics review since it did not involve participants.

Data sources and search strategy

Five sources of data were used. First, we searched 11 bibliographic databases from inception to May 2012: EMBASE, MEDLINE, PsycINFO, British Nursing Index and Archive (accessed via Ovid); Applied Social Sciences Index and Abstracts, British Humanities Index, Sociological Abstracts, Social Services Abstracts, International Bibliography of Social Sciences (accessed via CSA Illumina); CINAHL (accessed via EBSCOHost); and the Cochrane library. Databases were searched using the following terms identified from the title, abstract, key words or medical subject headings: ('well-being' OR 'wellbeing' OR 'wellness' OR 'happiness' OR 'happy' OR 'thrive' OR 'flourish' OR

'pleasure' OR 'joy' OR 'life ADJ1 satisfaction' OR 'satisfaction ADJ1 with ADJ1 life' OR 'strength\$' OR 'blessings\$' OR 'virtues\$' OR 'good ADJ1 life' OR 'fulfilment' OR 'eudaimonia' OR 'eudaemonia' OR 'hedonism') AND ('severe mental illness\$' OR 'severe mental disorders\$' OR 'serious mental illness\$' OR 'serious mental disorders\$' OR 'chronic mental illness\$' OR 'chronic mental disorder\$' OR 'psychosis' OR 'psychotic' OR 'schizophrenia' OR 'bipolar' OR 'manic' OR 'mania' OR 'schizo-affective' OR 'schizoaffective' OR 'paranoid' OR 'paranoia' OR 'catatonia\$' OR 'hebephrenia\$' OR 'disorganised'). The search terms and the use of MeSH headings were adapted for the individual databases and interfaces as needed. Second, tables of contents from three journals that were identified in the search as frequently publishing potentially relevant papers (British Journal of Wellbeing, Journal of Positive Psychology, Psychiatric Rehabilitation Journal), and two special issues on positive psychology and well-being were hand searched. Third, we searched the Grey Literature Network Service and web-sites of relevant charities in the field (Mental Health Foundation, New Economic Foundation, Young Foundation, Mind, Rethink). Fourth, eight experts with a high research profile in the field were asked to identify research on the promotion of well-being in people with psychosis. Finally, the reference lists of all included studies, relevant reviews and opinion papers were hand searched, as were relevant Cochrane reviews and NICE guideline reviews of RCTs for psychosis.

Data extraction and appraisal

The first 200 studies were independently rated for inclusion by two reviewers (BS, VB), achieving a concordance rate of 0.98. Disagreement was resolved by consensus. The remaining 19,137 studies were appraised by one review author (BS). Data were extracted into an Excel spreadsheet developed for a previous systematic review with narrative synthesis (Schrank, Stanghellini, & Slade, 2008). The methodological quality of the included studies was assessed using the Effective Public Health Practice Project "Quality Assessment Tool for Quantitative Studies" (EPHPP, 1998). This tool rates the extent to which bias may be present in eight different components of quantitative studies. Each of the areas is rated based on set criteria resulting in a global rating of strong, moderate, or weak.

Data analysis

Objective 1. Understand how well-being is measured in controlled trials with people with psychosis: We reviewed available measurement tools for well-being and used the results as a source of information for objectives 2 and 3. We first descriptively listed the measures and counted the retrieved studies in which they were used (see Table 1). After constructing the conceptual framework (see Table 2), we used vote counting to assess how frequently the individual framework dimensions were included in the used measures (see Table 3).

Objective 2. Develop an organising conceptual framework for well-being and Objective 3. Summarise the empirical evidence on psychosocial interventions to improve well-being in people with psychosis: We used a modified narrative synthesis approach (Popay et al., 2006). Objective 2 corresponds to the first narrative synthesis stage of identifying and developing a theory. Its result is a conceptual framework of well-being in psychosis which then serves as the organising framework for the data synthesis for objective 3. Data synthesis for objective 3 maps on the narrative synthesis stages two to four.

For objective 2 we used the measures of well-being from the studies meeting our inclusion criteria as the individual data units. We started from the three broad domains of well-being and its

Table 1

Description of well-being measures with number of studies included in the review using them as primary or secondary outcome measures.

Scale name	Brief description of constituent factors and domains	Established psychometric properties	Primary outcome measure (N studies)	Secondary outcome measure (N studies)
Subjective Satisfaction with Life Scale (SSLS)	Four domains: living situation, social relationships, work, self and present life.	Yes	0	2
WHOQOL-BREF	Four dimensions: psychological well-being (or health), physical health, social relationships, environment; plus overall quality of life	Yes	0	2
Lancashire Quality of Life Profile (LQoLP)	Eight life domains: work, leisure, social involvement, finances, living situation, legal and safety, health, and family relations; plus general well-being.	Yes	0	1
Yu quality of life for mental illness scale	Eight factors: life satisfaction, autonomy, health maintenance, family support, function, social activity, physical health, psychological welling	No	0	1
Short Form (SF)	Six or eight factors depending on version: physical functioning, role limitations due to physical health problems, bodily pain, social functioning, general mental health, role limitations because of emotional problems, vitality, health perception	Yes	0	1
Manchester Assessment of Quality of Life (MANSA)	Eight life domains: job, finances, friendships, leisure activities, accommodation, safety, physical health, mental health; plus general life satisfaction	Yes	0	1
Lehman Quality of Life Interview (LQOL)	Eight life domains: living situation, family, social relations, leisure, work, safety, finances, physical health; plus general life satisfaction	Yes	0	4
Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)	Five life domains: physical health, subjective feelings, leisure time activities, social relationships, general activities; plus overall life satisfaction	Yes	0	2
Subjective Well-being under Neuroleptics Scale (SWN)	Five subscales: emotional regulation, mental functioning, self-control, social integration, physical functioning	Yes	0	2
Psychological General Well-being Index (PGWI)	Six affective states equal six subscales: anxiety, depressed mood, positive well-being, self-control, general health, vitality	Yes	0	2
Social Adjustment Scale II (SAS-II)	Eight subscales: work role, household role, parental role, external family role, conjugal and nonconjugal sexual roles, romantic involvement, social and leisure activities, personal well-being	Yes	0	1
Ryff's Scales of psychological well-being (RSPW)	Six factors in the original scale (shorter version partly differ): environmental mastery, personal growth, self-acceptance, autonomy, purpose in life, positive relations with others	Yes	0	2
Scale for the Assessment of Well-Being (SAWB)	No sub-dimension, scale asks for 56 pairs of opposite feelings/mental states	Yes	0	1
Snaith–Hamilton Pleasure Scale (SHPS)	Four domains: interest/pastimes, social interaction, sensory experience, food/drink	Yes	1	0
Personal Well-being Index (PWI)	Eight life domains: standard of living, health, achievement in life, personal relationships, personal safety, community-connectedness, future security, spirituality	Yes	0	2
Life Satisfaction Index (LSI)	Five components: zest, resolution and fortitude, congruence among desired and achieved goals, a positive self-concept, mood tone	Yes	0	1
Subjective Exercise Experiences Scale (SEES)	Three subscales: psychological distress, subjective positive well-being, fatigue	Yes	2	0
Quality of Life Inventory (QOLI)	Satisfaction in eight areas: self-esteem, health, friends, relatives, money, work, play, love	Yes	0	1
General life satisfaction (LS)	Single question	n.a.	0	1
Enjoyment (ENJ)	Single question	n.a.	0	1

Table 2
Generic ONS Framework (ONS, 2012) modified for psychosis.

ONS conceptual framework	Modified conceptual framework	Example domains
More contextual domains	Domain 1: distal	
1. Natural environment	1. The environment	Area of residence, access to services, access to transport
2. The economy		
3. Governance		
Factors directly affecting individual well-being	Domain 2: proximal	
1. Relationships	1. Connectedness	
	- General social connection	Social activity, relationships, social functioning, community, integration
	- Family connection	Family relations, family support, parental role, relationship with children and relatives
	- Emotional connection	Friendships, emotional ties
	- Romantic connection	Sexual roles, romantic involvement, love relationship
2. What we do	2. Activities	
	- General activity	Usual activities, daily activities
	- Professional activity	Work, job, professional role
	- Leisure activity	Leisure time activities, recreation
3. Where we live	3. Living conditions	
	- Housing situation	Living situation, standard of living, accommodation, immediate neighbourhood
	- Financial situation	Finances, economic function
	- Safety	Legal security, safety, personal safety
4. Personal Finance	4. Mobility	
5. Health – mental and physical	Domain 3: observable	
	1. Health – mental and physical	
	- Physical health and functioning	Physical health, physical activity, physical functioning
	- Physical self-care	Attention to physical health and care, self-care, health maintenance
	- General mental health and functioning	Mental functioning, cognition, concentration, role limitations due to emotional problems
	2. Participation	Learning, creativity, helping others, civic action
	3. Autonomy	Freedom, autonomy, environmental mastery
	4. Success	Achievement in life, desired and achieved goals, resolution, fortitude
	Domain 4: non-observable	
	1. Bodily feelings/vitality	
	- Negative feelings	Fatigue, tiredness, apathy, exhaustion
	- Positive feelings	Energy, pep, vitality, zest
	2. Affect, mood tone	
	- Negative affect	Depression, anxiety, sadness, despair, anger
	- Positive affect	Feeling peaceful, happy, strong, great, terrific
	- Emotional regulation	
	3. Self-perception	Satisfaction with self, self-acceptance, self-concept, self-regard
	4. Self-control	Self-control, behavioural emotional control
	5. Life perspective	Meaning, purpose, spirituality, philosophy of life
Individual well-being	Domain 5: self-defined	
1. People's own assessment of their own well-being	1. Overall well-being	
	2. Overall life satisfaction	

Table 3
Scales used to measure well-being in the included studies and their coverage of domains of the applied conceptual framework of well-being in psychosis.

Scale name	Coverage of conceptual framework domains				
	Distal	Proximal	Observable	Non-observable	Self-defined
WHOQOL-BREF	X	X	X	X	X
Yu quality of life for mental illness scale (YuQoL)		X	X	X	X
Short Form (SF)		X	X	X	X
Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)		X	X	X	X
Lancashire Quality of Life Profile (LQoLP)		X	X		X
Lehman Quality of Life Interview (LQOL)		X	X		X
Social Adjustment Scale II (SAS-II)		X	X		X
Ryff's Scales of psychological well-being (RSPW)		X	X	X	
Subjective Well-being under Neuroleptics Scale (SWN)		X	X	X	
Quality of Life Inventory (QOLI)		X	X	X	
Subjective Satisfaction with Life Scale (SSLS)		X		X	X
Personal Well-being Index (PWI)		X	X		
Manchester Assessment of Quality of Life (MANSA)		X	X		
Snaith–Hamilton Pleasure Scale (SHPS)		X		X	
Scale for the Assessment of Well-Being (SAWB)			X	X	
Life Satisfaction Index (LSI)			X	X	
Psychological General Well-being Index (PGWI)			X	X	
Single question on enjoyment (ENJ)				X	
Subjective Exercise Experiences Scale (SEES)				X	
Single question on general life satisfaction (LS)					X

determinants proposed by the ONS (Beaumont, 2011), i.e. comprising individual feeling of well-being, factors directly affecting individual well-being, and more contextual domains, to organise the identified concepts of well-being. Specifically, we plotted the content of the measures and their factors according to the ONS domains, detected common components across the scales, and grouped them into higher order constructs. In an iterative process the broad groups were split into different categories and regrouped again. This led to a refinement in the overarching domains and an increasingly differentiated picture of the individual domains' content across the measures. The resulting conceptual framework of well-being in psychosis was plotted against the components of national well-being proposed by the ONS.

For objective 3 we aimed to identify the specific components and therapeutic methods used in each intervention. Given the huge variety of descriptive detail in the individual publications this was not possible. Hence, we identified the broad focus of each investigated intervention and its match with the new conceptual framework domains. This was possible for all studies except for those comparing overall services with each other. For the preliminary synthesis (narrative synthesis stage 2) we grouped the interventions according to their coverage of the new conceptual framework. Vote counting was used to assess the frequency of the individual well-being domains being addressed in the interventions. In order to assess if there was a particular weight of evidence for certain

well-being domains, we compared the results between the groups. To further explore relationships between studies (narrative synthesis stage 3) we compared the outcome of studies as grouped according to study methods. We tabulated the well-being dimensions addressed in the interventions and those addressed in the applied scales onto each other for each study. Agreement between the concept coverage in interventions and corresponding measurement was assessed by vote counting and displayed graphically. Different patterns of agreement were put in relation with the study results. To assess the robustness of the analysis (narrative synthesis stage 4) we grouped studies according to their quality rating and compared the results within and between groups.

Results

Study selection is shown in Fig. 1.

Objective 1: measurement of well-being

The search resulted in 28 eligible articles. These used 20 measures to assess well-being, described in Table 1.

One prominent way to assess well-being was with measures of health related quality of life (HRQOL). However, this was not done in a consistent way. While some authors considered the listed overall HRQOL scales as measures of well-being, others reported

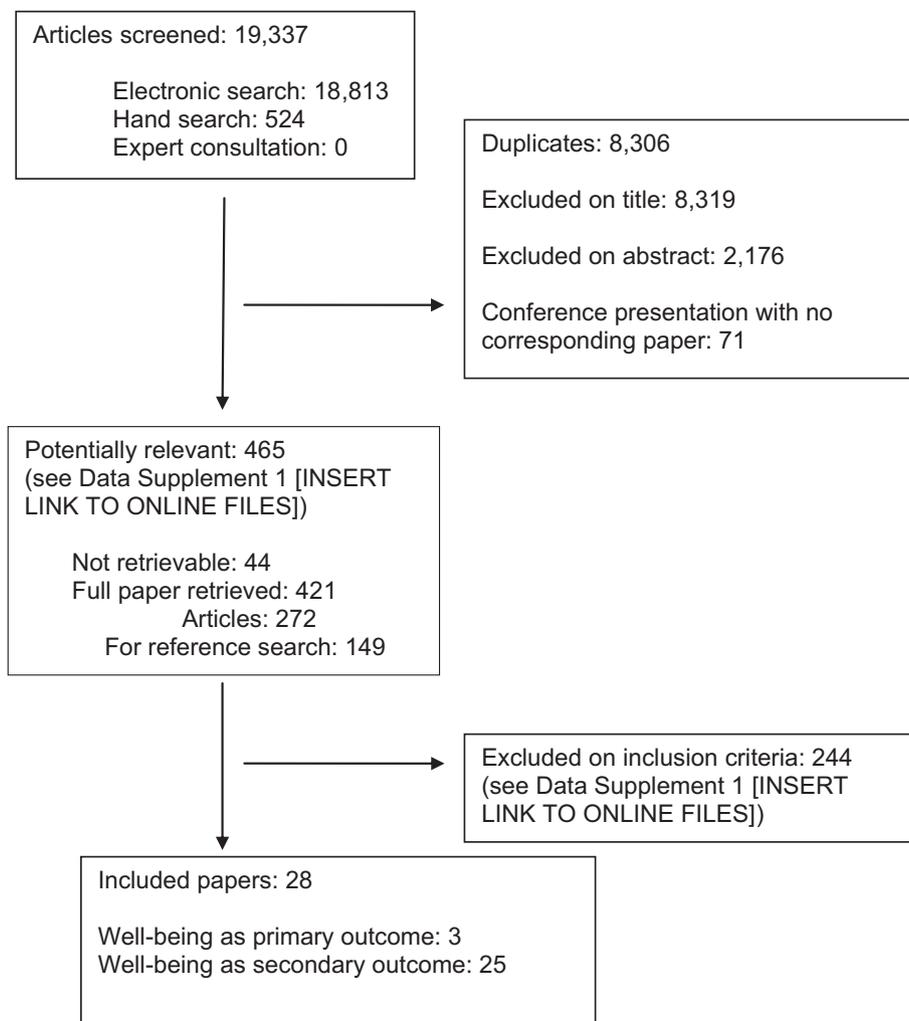


Fig. 1. Flow diagram of studies included in the review.

existing well-being subscales of these tools separately. HRQOL measures were also used in their original purpose, i.e. described as measures of quality of life, in addition to other scales framed to assess well-being.

Objective 2: applied conceptual framework of well-being in psychosis

The analysis of the measures' content resulted in a conceptual framework of well-being that spans five domains: (i) non-observable; (ii) observable; (iii) proximal; (iv) distal; and (v) self-defined. These domains can be understood as four layers of proximity to the person and one additional self-defined dimension.

The **non-observable** domain refers to intra-psychic phenomena such as self-perception, mood tone, or meaning and purpose in life, which are not readily visible from outside. The **observable** domain comprises aspects of a person that are exhibited to the outside world, such as environmental mastery, resolution, or physical health. The **proximal** domain describes factors which directly and immediately affect the individual. It includes what a person has or does, e.g. various kinds of relationships, finances, or occupation. Finally, the **distal** domain encompasses contextual factors which are not under a person's immediate influence, such as the wider environment or access to services.

In addition to the questions allocated to the above domains, some of the identified measures included a broad general question on overall well-being or overall life satisfaction. Such overall questions reflect an individual's personal view on what well-being means to them. Hence, we defined the individual overall assessment of well-being as a separate **self-defined** domain.

Table 2 shows the framework of well-being in psychosis resulting from our analysis in comparison with the generic framework of national well-being.

The ONS framework of national well-being addresses the whole of society (Beaumont, 2011). In contrast, the framework of well-being modified for psychosis focuses on the individual. Consequently, it places stronger emphasis on individual dimensions while distal dimensions such as environment are less prominent.

Table 3 displays the scales used to measure well-being in the included studies according to their coverage of the conceptual framework of well-being in psychosis.

Overall, 15 measures included proximal, 14 observable, and 15 non-observable dimensions. Distal dimensions were only mentioned once and self-defined well-being was asked for in nine scales. The emphasis placed on the addressed domains varied between the measures.

Objective 3: summarising the evidence

Our third aim was to characterise the empirical evidence on psychosocial interventions to promote well-being for people with psychosis. The preliminary synthesis (Popay et al., 2006) resulted in a grouping of interventions as shown in Table 4.

Most studies considered well-being as a secondary outcome or among several outcomes with no specified primary outcome measure. Two studies used it as one of two predefined main outcomes (Vancampfort et al., 2011a, 2011b), and only one study (Nathans-Barel, Feldman, Berger, Modai, & Silver, 2005) used well-being as the single main outcome. These three studies showed significant results.

Eight interventions addressed only one domain of well-being: proximal ($n = 3$); observable ($n = 5$). All others addressed combinations of well-being domains: proximal and observable ($n = 4$); proximal and non-observable ($n = 3$); observable and non-observable ($n = 2$); and proximal, observable and non-observable

($n = 1$). None of the interventions addressed distal matters. All studies focussing solely on observable domains showed non-significant results, while both studies focussing on a combination of observable and non-observable dimensions (Vancampfort et al., 2011a, 2011b) were significant. No further relationships were found between intervention focus and results.

One possible explanation for non-significant results might be that the measure in a study assesses something which was not a target of the intervention. To explore this we plotted the well-being dimensions addressed in the interventions against the applied measures. Results are shown in Table 5.

There was no relationship between study results and the agreement of the investigated interventions with the respective measurement tools. Only one study (Shawyer et al., 2012) showed no overlap between the well-being domains addressed in the intervention and the used scale. Two studies showed complete agreement. One of these had a significant result (Nathans-Barel et al., 2005) and one had not (Fardig, Lewander, Melin, Folke, & Fredriksson, 2011). Hence, the agreement between interventions and measurement alone did not suffice to explain different study results.

Comparing studies according to the applied trial methodology did elicit a potential relationship with results. Significant effects of the intervention were found in 16.7% of cohort analytic studies, in 40% of controlled clinical trials, and in 25% of RCTs.

To assess the robustness of our analyses we grouped studies according to their quality rating. This confirmed results with respect to the focus of the investigated interventions. There was no particular weight of evidence for a specific well-being focus as studies with any quality rating addressed a mixture of well-being dimensions. Comparing quality ratings among study designs also confirmed a relationship. Cohort analytic studies had weak or moderate quality only (50% each); controlled clinical trials also included strong studies (20%), apart from weak and moderate ones (40% each); and RCTs showed only moderate and strong quality ratings (50% each). Finally, there was a graded relationship between the quality rating and the significance of study results. Among the weak studies 57% were significant, among those with moderate quality 30.8%, and among strong studies none showed a significant result with respect to well-being.

Discussion

This review aimed to characterise the evidence base relating to well-being in people with psychosis. Given the complexity of the construct of well-being and the wide range of factors it spans, together with the vastly dissimilar use of the concept in intervention studies, meta-analysis was not possible. Instead, we conducted a narrative synthesis adapted from Popay et al. (2006). The results offer detailed insight into the use of the concept of well-being in intervention research involving people with psychosis as well as explicit practical suggestions for a potential way forward in this scientific area.

Objective 1: measurement of well-being

The 28 studies included in our analysis used 20 different scales to assess well-being. These scales covered a wide range of conceptual backgrounds. There was no single agreed on definition or framework for well-being and authors did usually not state why they chose a specific scale. It is important to note that amongst the various constructs considered to constitute well-being by individual researchers, many also feature as strong separate constructs in the literature. We decided to include multiple constructs in our examination of well-being without preconceived conceptual

Table 4

Studied interventions according to their focus on dimensions within the applied conceptual framework of well-being in psychosis.

Reference	Well-being focus of intervention	Intervention groups	Study design	Quality rating	Population	N	Follow-up	Well-being measure (* primary outcome)	Effects on well-being
Lak, Tsang, Kopelowicz, & Liberman, 2010	Proximal	Intervention: Basic Conversation Skill group with skill generalisation training (SGT) Control: without SGT	Controlled clinical trial	Strong	Psychosis 100%	106	6 Months	PWI	Significant effect of skill training without SGT at post-treatment, but no significant difference between the groups at follow-up
Ban, Emer, & Keller, 2001		Intervention: course in group process Control: treatment as usual (TAU)	Controlled clinical trial	Moderate	Unclear	20	12 Weeks	RSPW	Well-being increased in intervention group, but no significant difference between the groups at follow-up
Klein, Cnaan, & Whitecraft, 1998		Intervention: Friend's Connection Programme Control: TAU	Controlled clinical trial	Weak	Dual diagnosis	61	6 Months	LQOL	Significant difference between groups at follow-up (significant effect of intervention)
Vreeland et al., 2006	Observable	Intervention: group education about illness management and treatment Control: TAU	RCT	Strong	Psychosis 100%	71	24 Weeks	PGWI	No significant changes, no significant difference between the groups at follow-up
Moritz et al., 2011		Intervention: metacognitive training group Control: TAU	RCT	Strong	Psychosis 100%	36	8 Weeks	WHOQOL-BREF	No significant changes, no significant difference between the groups at follow-up
Kwon et al., 2006		Intervention: weight management Control: TAU	Controlled clinical trial	Moderate	Psychosis 100%	48	12 Weeks	WHOQOL-BREF	No significant difference between the groups at follow-up
Skrinar, Huxley, Hutchinson, Menninger, & Glew, 2005		Intervention: weight management Control: waiting list	Controlled clinical trial	Moderate	Mood or psychotic disorder	30	12 Weeks	SF, LQOL	Well-being increased in intervention group, but no significant difference between the groups at follow-up
Porsdal et al., 2010		Intervention: weight management Control: TAU	Cohort analytic study	Moderate	Schizophrenia 51.9%, bipolar 8.9%	314	6 Months	SWN	No significant difference between the groups at follow-up
Fardig et al., 2011	Proximal observable	Intervention: Illness Management and Recovery group Control: TAU	RCT	Strong	Psychosis 100%	41	21 Months	MANSA	No significant changes, no significant difference between the groups at follow-up
Penn et al., 2011		Intervention: Graduated Recovery Intervention Programme Control: TAU	RCT	Moderate	Psychosis 100%	46	8–12 Weeks	RSPW	No significant changes, no significant difference between the groups at follow-up
Marder et al., 1996		Intervention: Friend's Connection Programme Control: TAU	RCT	Weak	Dual diagnosis	61	6 Months	LQOL	Significant effect favouring intervention
Mueller & Roder, 2005		Intervention: cognitive behavioural recreation therapy Control: general social skills and problem solving training	Controlled clinical trial	Weak	Psychosis 100%	70	1 Year	SAWB	Well-being improved significantly in both groups, no significant difference between groups at follow-up

(continued on next page)

Table 4 (continued)

Reference	Well-being focus of intervention	Intervention groups	Study design	Quality rating	Population	N	Follow-up	Well-being measure (* primary outcome)	Effects on well-being
Crawford et al., 2012	Proximal non-observable	Intervention: group art therapy or activity groups without art Control: TAU	RCT	Strong	Psychosis 100%	417	24 Months	PGWI	No significant difference between the groups at follow-up
Shawyer et al., 2012		Intervention: acceptance-based cognitive behavioural therapy (AB-CBT) Control: befriending	RCT	Moderate	Psychosis 100%	43	6 Months	LS, ENJ	Life satisfaction increased significantly after AB-CBT, enjoyment increased significantly after both interventions, no significant difference between groups at follow-up
Nathans-Barel et al., 2005		Intervention: animal-assisted therapy Control: TAU	Controlled clinical trial	Weak	Psychosis 100%	10	10 Weeks	SHPS*	Significant effect of intervention
Vancampfort et al., 2011a	Observable non-observable	Intervention: progressive muscle relaxation single session Control: resting session	RCT	Moderate	Psychosis 100%	64	Before–after	SEES*	Significant effect of intervention
Vancampfort et al., 2011b		Intervention: yoga or aerobic exercise single session Control: no exercise control	RCT	Moderate	Psychosis 100%	40	Before–after	SEES*	Significant effect of intervention
Kam & Siu, 2010	Proximal observable non-observable	Intervention: horticultural activity programme Control: TAU	RCT	Moderate	Psychosis 83%	24	2 Weeks	PWI	No significant difference between the groups at follow-up
Huxley, Evans, Burns, Fahy, & Green, 2001	Compares services	Intervention: intensive case management Control: standard case management	RCT	Strong	Psychosis 100%	708	2 Years	LQoLP	No significant effect of intervention (but of treatment location)
Essock et al., 2006		Intervention: dual diagnosis treatment within assertive community treatment Control: dual diagnosis treatment within standard case management	RCT	Strong	Dual diagnosis	198	3 Years	LQOL	No significant difference between the groups at follow-up
Lambert, Naber, &		Schimmelmann, 2010	Intervention: Assertive Community Treatment (ACT) Control: TAU	Controlled clinical trial	Strong	Psychosis 100%	120	12 Months	SWN
No significant difference between the groups at follow-up									
Shu, Lung, Lu, Chase, & Pan, 2001		Intervention: psychiatric home care Control: psychiatric half-way house	Cohort analytic study	Weak	Psychosis 100%	60	6 Months	YuQoL	No significant difference between the groups at follow-up

Dott, Walling, Bishop, Bucy, & Folkes, 1996		Intervention: crisis unit Control: psychiatric hospital	Cohort analytic study	Weak	Psychosis 68%	78	Variable	Q-LES-Q	No significant difference between the groups at follow-up
Broner, Lattimore, Cowell, & Schlenger, 2004		Intervention: criminal justice diversion Control: standard criminal justice methods	Cohort analytic study	Moderate	Dual diagnoses	2000	12 Months	LQOL	No significant difference between the groups at follow-up
Timko, Nguyen, Williford, & Moos, 1993		Compares 3 types of facilities: psychiatric units, nursing home care units, community nursing homes	Controlled clinical trial	Moderate	Schizophrenia or organic brain syndrome	403	12 Months	LSI	Significant difference between facilities at follow-up
Boden, Sundstrom, Lindstrom, Wieselgren, & Lindstrom, 2010		Intervention: before implementation of ACT Control: after implementation of ACT	Cohort analytic study	Moderate	Psychosis 100%	144	5 Years	SSLS	No significant difference between the groups at follow-up
Stanard, 1999		Intervention: training of case managers in strengths model of case management Control: standard case managers	Controlled clinical trial	Weak	Psychosis 83%	29	3 Months	QOLI	Life satisfaction increased in intervention and decreased in control group, significant difference at follow-up
Schmidt-Posner & Jerell, 1998	Compares three case management service models: PACT adaptation, intensive broker, clinical team	Cohort analytic study	Weak	Psychotic or major affective disorder	Not stated	18 Months	SSLS	Life satisfaction was significantly lower in the PACT model at follow-up	

Table 5
Domains of well-being from new conceptual framework addressed by interventions and/or measurement in included studies.

Reference	Well-being domains					Study results for well-being
	Distal	Proximal	Observable	Non-observable	Self-defined	
Lak et al., 2010		Both	Scale			n.s.
Ban et al., 2001		Both	Scale	Scale		n.s.
Klein et al., 1998		Both	Scale		Scale	significant
Vreeland et al., 2006			Both	Scale		n.s.
Moritz et al., 2011	Scale	Scale	Both	Scale	Scale	n.s.
Kwon et al., 2006	Scale	Scale	Both	Scale	Scale	n.s.
Skrinar et al., 2005		Scale	Both	Scale	Scale	n.s.
Porsdal et al., 2010		Scale	Both	Scale		n.s.
Fardig et al., 2011		Both	Both			n.s.
Penn et al., 2011		Both	Both	Scale		n.s.
Marder et al., 1996		Both	Both		Scale	Significant
Mueller & Roder, 2005		Intervention	Both	Scale		n.s.
Crawford et al., 2012		Intervention	Scale	Both		n.s.
Shawyer et al., 2012		Intervention		Intervention	Scale	n.s.
Nathans-Barel et al., 2005		Both		Both		Significant
Vancampfort et al., 2011a			Intervention	Both		Significant
Vancampfort et al., 2011b			Intervention	Both		Significant
Kam & Siu, 2010		Both	Both	Intervention		n.s.

Scale: well-being domain is addressed in the scale used in this study only.

Both: well-being domain is addressed in both the intervention and the scale used in this study.

Intervention: well-being domain is addressed in the intervention investigated in this study only.

boundaries, apart from focussing on concepts including subjectivity. Our results show that no specific concept or framework has been applicable to well-being research as a whole. This confirms the existing impression of well-being as an ill-defined concept which may currently be used as a name tag for a supposedly fashionable scientific area. The most prominent conceptual overlap was found between well-being and health related quality of life (HRQOL). The decision taken by individual authors of whether to consider a certain scale as a measure of HRQOL or of well-being appeared to be arbitrary and was usually not justified in publications. This ambiguity of concepts is also reflected by the existing literature which shows an unresolved discourse as to how far well-being, HRQOL and other related constructs do overlap or even include each other (Spiro & Bosse, 2000).

In order to advance well-being research in relation to people with severe mental illness, such as psychosis, it is important to first have a conceptual framework of well-being in this specific client group, which then allows us to suggest promising strategies to improve well-being and make an informed decision on the measurement tools to be applied in future research. Objective 2 addressed this knowledge gap.

Objective 2: conceptual framework

By analysing the measurement tools applied to assess well-being in current research involving people with psychosis, we developed an overarching framework for well-being in psychosis. We identified five dimensions of well-being. The non-observable, observable, proximal, and distal domains are conceptualised as layers of proximity to the person ranging from intra-psychic to contextual factors. In addition the self-defined domain is based on the individual assessment of general overall well-being. Assessment of overall well-being or life satisfaction has been theorised to require respondents to reflect on their overall state of life including as many domains or components as are relevant to the respective individual (Cummins, 1998). Global ratings are thought to reflect a subjective valuation since different areas of life may be valued differently by individuals (Diener, Suh, Lucas, & Smith, 1999; Ryff & Keyes, 1995). Such personally relevant factors do not necessarily overlap with a given scale's explicitly mentioned dimensions and

an individual's personal view of what well-being means to them may be different to any aggregate framework.

The proposed conceptual framework of well-being in psychosis can be clearly distinguished from the generic framework of national well-being developed by the ONS. Issues of inequality and social justice are not captured in the framework of well-being in psychosis. Instead the framework places stronger emphasis on individual rather than societal factors, and refers to a number of specific dimensions that may be particularly relevant to people with psychosis, such as mental health and functioning, but also participation, autonomy, self-perception or self-control. In the ONS framework, the domain of individual well-being represents the subjective part of the concept. In contrast, the new conceptual framework includes subjective experience more pervasively. The new 'self-defined' domain adds an additional level of subjectivity, in that it captures a person's overall intuitive understanding of well-being. The proposed framework allows inferences to be made (i) for everyday practice in mental health care, (ii) for future research especially on specific interventions aiming to improve well-being in people with psychosis, and for (iii) the measurement of well-being in such research.

In clinical practice, in order to increase well-being it will be important to attend to not just the observable level of a person's well-being but also to the non-observable, such as personal narratives and individual meaning making, to proximal issues, such as relationships and meaningful activities, and to more distal aspects, such as the perception of and coping with societal stigma. Mental health care will need to focus not only on psychopathology and functioning but also on psychological aspects and on contextual issues. This broadening of the clinical lens as has also been suggested for other recent developments and claims for mental health care such as recovery oriented practice (Slade, 2009) or person centred care (Mezzich & Salloum, 2007). For example, for recovery orientation in practice it may be a core target of clinical efforts to promote citizenship, i.e. to see beyond "service user," recognise service user rights and facilitate meaningful occupation and social inclusion to help people live as equal citizens (Le Boutillier et al., 2011). In order to do so, mental health professionals have been called to become social activists who challenge stigma and discrimination, and promote societal well-being (Slade, 2010).

For research, the conceptual framework can provide a theoretical basis for targeting interventions on specific aspects of well-being. To successfully improve well-being future interventions may integrate various existing strategies that have or have not been labelled as focussing on well-being but which have a contribution to make. Approaches that plausibly have an effect on well-being include, for example, broader anti stigma campaigns to affect the distal level of well-being; family interventions (Bird et al., 2010), social skills training, or various forms of activation (Mazzucchelli, Kane, & Rees, 2010) for the proximal level; health education and physical activity (Holley, Crone, Tyson, & Lovell, 2011), or goal setting techniques (MacLeod, Coates, & Hetherington, 2008) to affect the observable level; narrative therapy and meaning making (Wallis, Burns, & Capdevila, 2011) or cognitive therapy techniques (Fava, Rafanelli, Cazzaro, Conti, & Grandi, 1998) for well-being on the non-observable level. Other therapeutic interventions, e.g. positive psychotherapy (Rashid, 2008), may already target more than one well-being domain. In order to be applicable to people with psychosis these interventions will need to be adapted and suitably integrated.

Some known measures of well-being with adequate psychometric properties were not retrieved in the review, e.g. the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) (Tennant et al., 2007), the Satisfaction with Life Scale (Diener, Robert, Randy, & Griffin, 1985), or the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988). This is most likely due to their not being used in or indexed for published intervention studies with people with psychosis. No one single measurement tool exists to simultaneously address all identified dimensions of well-being. Combinations of existing measurement tools should be used to cover all five framework domains.

Objective 3: summarising the evidence base

Published studies on interventions aiming to increase well-being are very dissimilar with respect to the investigated interventions, study quality, measures, and results. Only one used well-being as the single primary outcome, two defined it as one of two primary outcomes. All other studies reported well-being as one of several secondary outcomes only. The focus of most included studies on primary outcomes other than well-being may explain their great dissimilarities. Eight increased participants' well-being and twenty did not. Failure to show significant results may be due to a variety of reasons, such as well-being not being the primary outcome, but also small sample size, lengthy follow-up time, very similar intervention and control group or study quality. Study quality appears to be a particularly relevant explanation for significant results, as those with low quality were most likely to significantly improve well-being. This is similar to other areas of medicine and points to the necessity of conducting more carefully designed RCTs in the future.

Overall, there was no particular weight on a specific intervention focus. A mixture of types of interventions seems to improve well-being. Also, agreement between the well-being dimensions addressed in interventions and those addressed in the corresponding measurement scales was not necessary for results to be significant. The different patterns of agreement rather allow the conclusion that addressing one domain relevant for well-being in a given intervention may have a 'spillover' effect onto other well-being domains or overall well-being, i.e. the effects of well-being targeted interventions seem to go beyond their immediate targets. This points to an optimistic view regarding our ability to affect well-being in mental health systems. Interventions that improve domains of well-being in various client groups do already exist. The next step is to adapt them for people with psychosis and integrate them into an overall well-being therapy.

Strengths and limitations

This systematic review offers the first detailed description of the state of research on well-being in psychosis. It draws on a broad base not only of scientific but also grey literature which increases the validity of the findings. As outcome searches are known to be difficult we also included Cochrane and guideline searches to further improve the review's reliability. We identified key knowledge gaps in relation to both the scientific design and to content of research into well-being in psychosis. This allows us to make suggestions for a way forward in this important area of research. The review also provides the first higher level insight into the nature of well-being and possible ways to improve of well-being in clinical practice.

We excluded studies using combinations of measures considered by the authors to represent well-being. Overall, the choice of these scales seems arbitrary and rarely explicitly justified in published articles. Including all studies in which the authors used the term well-being for whatever they measured would have identified a larger but less coherent sample, which would have been more difficult to organise conceptually. The selection of measures to include in the review could have been extended. However, all decisions regarding the methods of this review were taken after conducting a detailed scoping review. We decided to take a route that would lead to the most practically useful results given the complexity, diversity and diverse quality of the available data. The heterogeneity found in how well-being was operationalised across measures also indicates the challenges in employing well-being as a useful concept.

The applied conceptual framework of well-being in psychosis was constructed by analysing published quantitative research and does not include the first-hand experience and opinion of those affected. Hence, it reflects the understanding of well-being from a research perspective but cannot serve as a comprehensive model of well-being in the client group. Previous research has sought to obtain views of mental health service users in order to understand complex concepts and the acceptability of different methods for their assessment (Blount, Evans, Birch, Warren, & Norton, 2002; Crawford et al., 2011). Service user views, for example gathered through qualitative research in addition to a literature review, are needed to establish a complete picture of the meaning and components of well-being in psychosis. However, the conceptual framework presented in this article provides a component for a comprehensive model. It also allows us to suggest both intervention strategies and measurement tools to adequately address well-being in psychosis in future research.

Our review focussed on psychosis diagnoses, and future work may include a more specific diagnostic focus (e.g. schizophrenia) to investigate the extent to which well-being differs across diagnostic groups within psychosis. Similarly, fully meeting Objective 3 (Summarising the evidence base) will involve more detailed characterisation and synthesis of the identified intervention studies.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.socscimed.2013.05.011>.

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