

Beliefs in social inclusion: Invariance in associations among hope, dysfunctional attitudes, and social inclusion across adolescence and young adulthood

CLIO BERRY AND KATHRYN GREENWOOD

University of Sussex and Sussex Partnership National Health Service Foundation Trust

Abstract

Social disability in youth is an important precursor of long-term social and mental health problems. Social inclusion is a key policy driver and fits well within a new paradigm of health and well-being rather than illness-oriented services, yet little is known about social inclusion and its facilitators for “healthy” young people. We present a novel exploratory structural analysis of social inclusion using measures from 387 14- to 36-year-olds. Our model represents social inclusion as comprising social activity and community belonging, with both domains predicted by hopeful and dysfunctional self-beliefs but hopefulness more uniquely predicting social inclusion in adolescence. We conclude that social inclusion can be modeled for meaningful comparison across spectra of development, mental health, and functioning.

Youth is a time for forging a social identity as well as a particular period of vulnerability for the development of mental health problems (Cobigo, Ouellette, Lysaght, & Martin, 2012; Fowler et al., 2010; Kessler et al., 2007). Social inclusion is a key goal in mental health treatment because social exclusion is associated with the persistence and exacerbation of mental health problems (Department of Health, 2011). However, social disability is observable before the onset of complex mental health problems (Fowler et al., 2010), constituting a clear risk factor for development of such problems (Valmaggia et al., 2013). In the general population, social inclusion is associated with greater psychological and physiological health and well-being, yet research has tended to focus on social exclusion and exclusively within vulnerable groups (Begen & Turner-Cobb, 2014; Spandler, 2007). Thus, little is known about “what” or “how much” social inclusion might be considered normative, despite its positioning as an important and supposedly achievable goal in mental health interventions (Spandler, 2007). An empirical study of the model of social inclusion that is applicable to both clinical and non-

clinical populations of young people is needed. It is important to understand what “normative” social inclusion looks like in a broad healthy population, in which mental health is considered a continuum, before subsequently testing its variation and applicability with people who have been given clinical diagnoses. This is in keeping with the recent paradigm shift in mental health services to focus on health and well-being as meaningful to all people, rather than studying “illness” and disability within select groups (Slade, 2010; Wood & Tarrier, 2010).

The Structure of Social Inclusion

Measurement of social inclusion is hampered by multiple definitions and a lack of empirical investigation (Cobigo et al., 2012; Hall, 2009; Lloyd, Tse, & Deane, 2006; Morgan, Burns, Fitzpatrick, Pinford, & Priebe, 2007). The concept overlaps with constructs such as community integration and social functioning (Priebe, 2007; Wellman & Berkowitz, 1988; Wong & Solomon, 2002), but extends them, encapsulating objective and subjective indices across social, vocational, and occupational domains (Hall, 2009; Parr, Philo, & Burns, 2004; Sayce, 2001). Reliance on both objective and subjective indices is the key strength of social inclusion: the former easier to interpret and persuade policymakers, the latter potentially more changeable, less value laden, more sensitive to individual experiences and aspirations (Corrigan & Buican, 1995; Priebe, 2007; Spandler, 2007). Furthermore, increased objective activity without associated positive subjective experience may actually decrease well-being (Corrigan & Buican, 1995; Hall, 2010).

This research was supported by a doctoral studentship awarded to the first author from the University of Sussex and Sussex Partnership National Health Services Foundation Trust (G0236). Both authors conceived of the study and participated in its design. The first author coordinated the study, performed the measurement and the statistical analysis, and prepared the manuscript draft; the second author participated in the interpretation of the data and drafting of the manuscript; and both authors read and approved the final manuscript. We are very grateful to everyone who participated in this research.

Address correspondence and reprint requests to: Clio Berry, Research & Development, Sussex Education Centre, Millview Hospital, Neville Avenue, BN3 7HZ; E-mail: c.berry@sussex.ac.uk.

Suggested candidate objective indicators reflect the presence or absence of social networks and social, cultural, and leisure activities (Cobigo et al., 2012; Hall, 2009; Martin & Cobigo, 2011; Morgan et al., 2007). Suggested subjective indicators focus on a sense of belonging, perceiving that one fits in with and is valued by others and that relationships are mutual and reciprocal (Hagerty, Williams, Coyne, & Early, 1996; Mahar, Cobigo, & Stuart, 2013; Norman, Windell, Lynch, & Manchanda, 2012). Active objective political participation is not necessarily a normative youth activity per se (Harris, 2010; Tonge, Mycock, & Jeffrey, 2012), but feeling one's political beliefs are listened to promotes subjective belonging (Harris, 2010).

Paid employment, often cited as the key indicator of social inclusion, inadequately reflects the contributions of young people to society within current high youth unemployment and complex transitions post-age 16 (Bynner, 2005; Hall, 2009; Harris, 2010; Smith, Lister, Middleton, & Cox, 2005), and especially so for vulnerable people who may not all be able or desire to engage in paid work (Priebe, 2007). A broader conceptualization of occupation including education, leisure, and cultural activities may better capture the occupational domain of young people's social inclusion (Harris et al., 2008). The current study is the first known exploration of how such indicators of social inclusion cluster together.

Predictors of Social Inclusion

While we acknowledge structural impediments to social inclusion such as economic instability (Sayce, 2001), locating social inclusion fully within a "barriers" approach may perpetuate exclusion by locating causes within unchangeable systems (Levitas, 1998). An individual capacities approach can help to identify potential targets on which to focus interventions. Our approach follows the premise that beliefs about oneself influence activities, behaviors, and relationships (Saf-ran & Segal, 1996; Saltzberg & Dattilio, 1996), and focuses especially on hope theory (Snyder, 2002) and cognitive theory (Beck, Rector, Stolar, & Grant, 2009) in keeping with an equal weighting to both "positive" and "negative" characteristics in functioning (Wood & Tarrier, 2010).

Hopefulness

Hope theory (Snyder, 2002) suggests that what people hope and expect to come influences their behavior. Hope is "a cognitive set that is based on a reciprocally-derived sense of successful agency (goal-directed determination) and pathways (planning to meet goals)" (Snyder, Irving, & Anderson, 1991, p. 571). Agency, the motivation and belief in one's ability to attain goals, sparks the identification of pathways, with both components mutually reinforcing during ongoing goal pursuit (Snyder, 2002). Goals are essential to hope and must be sufficiently valuable to occupy an individual's thoughts without being unquestionably obtainable (Snyder, 2002).

Global trait hope predicts outcomes for young people including academic and athletic attainment (Marques, Lopez,

Fontaqine, Coimbra, & Mitchell, 2015). However, the more concrete domain-specific hope should greater predict activity and experience in associated life domains and may be particularly amenable to intervention (Snyder, 2002). Domain-specific hope correlates with academic, athletic, social, leisure, and family life attainment and satisfaction in healthy young people (Kwon, 2002; Robinson & Schumacker, 2009; Snyder, 2002). However, previous studies have prioritized nonsocial and objective outcomes (Gilman, Dooley, & Florell, 2006), and no know studies have focused on social inclusion.

Dysfunctional attitudes

Two types of dysfunctional attitudes were first identified in Beck Epstein, and Harrison's (1983) account of cognitive vulnerabilities to depression: "defeatist performance" beliefs reflecting exaggerated concern with performance and "need for approval" beliefs reflecting exaggerated concern with others' approval. Reportedly, dysfunctional attitudes undermine self-worth and increase sensitivity to adverse life events, leading to withdrawal from tasks and effortful activities for protection against anticipated failure and criticism (Beck et al., 1983, 2009). Dysfunctional attitudes are fairly stable (Vázquez & Ring, 1993) but can change during psychological intervention (Rector, 2013).

Dysfunctional attitudes predict social and occupational functioning in psychosis and are thought to mediate the impact of negative symptoms in long-term, short-term, and at risk for psychosis populations (Beck & Rector, 2005; Beck et al., 2009; Morrison et al., 2006). For adolescents and young adults without mental health problems, dysfunctional attitudes are cross-sectionally associated with lower perceived social support, greater loneliness (Halamandaris & Power, 1997; Wilbert & Rupert, 1986), increased likelihood of interpersonal problems (Whisman & Friedman, 1998), reduced quality of life (Long & Hayes, 2014), university adjustment, and well-being (Halamandaris & Power, 1997). However, analyses have not tended to control for mood, despite dysfunctional attitudes representing vulnerability to low mood and depression (Beck et al., 1983). Furthermore, no known exploration of associations with social inclusion exists. The "broaden and build" model suggests that while negative thoughts and emotions encourage narrowly focused "survival" behaviors, such as withdrawal in the context of dysfunctional attitudes, strengths such as hope promote novel positive behavioral strategies and distract individual from these negative thoughts (Compton, 2005; Fredrickson, 1998; Renner, Schwarz, Peters, & Huibers, 2013).

A developmental lens

Developing a social identity and negotiating new activities in the social world are key developmental tasks, and aging provides different opportunities for interactions and activities (Cobigo et al., 2012). There is little agreement regarding what "developmentally appropriate" health and social care

looks like and how it should be operationalized (Farre et al., 2015), yet in youth, vulnerability to social exclusion and mental health problems is high and interventions conducted sensitively at relevant turning points can have a particularly effective and long-lasting impact (Cohen Kadosh, Linden, & Lau, 2013; Fowler et al., 2009; Mahar et al., 2013). Thus, there is a clear need to consider social inclusion within a developmental context (Cobigo et al., 2012; Martin & Cobigo, 2011; Priebe, 2007).

Processes of identity forming and understanding the self in relation to friends, family, and romantic partners are key developmental trajectories in adolescence (Hill et al., 2013). Socializing and friendships represent particularly important goals for adolescents, with occupation and community involvement more paramount for young adults (Hartup & Stevens, 1997; Iarocci, Yager, Rombough, & McLaughlin, 2008; Steinberg & Morris, 2001). Objective social activities and network sizes increase through adolescence then decline in young adulthood, perhaps as people learn to derive equal subjective benefit from fewer interactions (Carstensen, 1991; Wrzus, Hänel, Wagner, & Neyer, 2013).

Dysfunctional attitudes are thought to influence behaviors more when people reach cognitive maturity (i.e., early adulthood; D'Alessandro & Burton, 2006), suggesting that a stronger association with social inclusion would be present in young adulthood compared to adolescence. It has been suggested that high hope arises in secure childhood attachments to caregivers (Snyder, 2002), yet developmental changes in the course and impact of hope is unclear (Esteves et al., 2013). Younger people may be more confident in their abilities (Schunk & Meece, 2006) and thus have increased agency, yet adults arguably benefit from more experience in goal pursuit (Freund, Hennecke, & Riediger, 2010). Thus, we made no a priori prediction regarding the nature of age differences in associations between hopefulness and social inclusion.

Gender and ethnicity are also potentially important covariates, although again no a priori hypotheses were made. Females report closer relationships, provision of more social support (Belle, 1987), and greater community participation (Bruegel, 2005; Lowndes, 2000). People identifying with a minority ethnic group may have reduced objective indices of inclusion (Campbell & McLean, 2003; McPherson, 1999), but experience increased subjective social inclusion within distinct ethnic communities (Campbell & McLean, 2003).

Hypotheses

We hypothesized that social inclusion would be denoted by (a) objective participation in social networks and activities, (b) subjective experience of social acceptance and relationship reciprocity, (c) objective participation in occupational (cultural and leisure) activities, and (d) subjective sense of belonging, including valued occupation and political inclusion. We hypothesized that domain-specific hopefulness (social, romantic, leisure, work, academic, and family) and dysfunctional attitudes would predict social inclusion in related do-

main, and that greater domain-specific hopefulness would protect against negative associations between dysfunctional attitudes and social inclusion. We also hypothesized that social and objective domains of inclusion would be more pronounced in adolescence and occupational and subjective social inclusion domains more pronounced in young adulthood, and dysfunctional attitudes would be more strongly associated with social inclusion in young adulthood compared to adolescence.

Methods

Sample size

Power is not readily computable for complex exploratory modeling as is the present focus (Thoemmes, MacKinnon, & Reiser, 2010); thus, sample size heuristics were consulted. Heuristics recommend 300 cases for factor analytic modeling (Comrey & Lee, 1992; Kahn, 2006) and $\geq 5:1$ cases per free model parameter for path modeling more generally (Bentler & Chou, 1987; Tanaka, 1987). Thus, a target minimum sample size was set at 300, with an additional criterion of testing models with at least 5:1 cases to free parameters.

Procedure

Measures were administered via an anonymous cross-sectional online questionnaire using Bristol Online Survey software (<http://www.survey.bris.ac.uk>). A convenience sample of young people was recruited from university and National Health Service staff and students in the South of England; social media including Facebook, Netlog, The Student Room, Jobseekers Advice Forum, Football.co.uk Forum, Teen Forum and Habbox; and survey websites including Psych Hanover Psychological Research on the Net, Online Psychology Research, and the Social Psychology Network. Ethical approval for the research was provided by the university research ethics committee (KGCB0511). Participants provided informed consent by responding affirmatively to a consent item and submitting the questionnaire. No personal data were requested or obtained as part of the questionnaire.

Participants

Participants were aged 14 to 36 years, with residence of the United Kingdom or the Republic of Ireland, and no current mental health problems. The final sample ($N = 387$), 238 (61.5%) females, 139 (35.9%) males, 6 (1.6%) nonresponses, and 4 (1.0%) trans or other gender, was aged from 14 to 36 years ($M_{\text{age}} = 20.83$, $SD = 4.49$) and described their ethnicity as follows: 298 (77.0%) White British; 25 (6.5%) White other; 20 (5.2%) British Indian, Pakistani, or Bangladeshi; 15 (3.9%) unknown; 14 (3.6%) Black British; 7 (1.8%) mixed; 3 (0.7%) African; 3 (0.7%) Asian; and 2 (0.5%) Chinese, with 341 (88.1%) born in the United Kingdom, 44 (11.4%) not, and 2 (0.5%) unknown. Almost all participants

(95.9%) were engaged in vocational activity; 33.33% ($n = 129$) were in education only; 21.44% ($n = 83$) were in paid employment only; and 41.10% ($n = 159$) in a combination of employment and education.

A total of 619 people started the online questionnaire and the following exclusions made; 9 did not meet inclusion criteria, 6 gave wholly invalid or incongruous responses, 70 reported current mental health problems, and 147 provided demographic information only. Of these 147, the age range was very comparable to the final sample (range = 15–33 years, $M_{\text{age}} = 19.66$, $SD = 3.83$). Gender was reported by 66 of these people, with 33 (50%) male, 32 (48.5%) female, and 1 (1.5%) trans or other. Ethnicity was reported by 69 people, with 46 (66.7%) White British; 9 (13.0%) White other; 6 (8.7%) British Indian, Pakistani, or Bangladeshi; 5 (7.2%) Black British; 2 (2.9%) mixed; and 1 (1.4%) Chinese, with 55 (72.4%) born in the United Kingdom, 21 (27.6%) not, and 71 nonresponses. Where present, demographic details of those people not completing the questionnaire are comparable to those of the final sample.

Measures

Social inclusion.

Objective social and occupational activity. The Social Relationship Scale (McFarlane, Neale, Norman, Roy, & Streiner, 1981) was used to capture objective indicators of the size and reciprocity of individuals' social networks across social (home and family, personal and social), occupational, and other life areas (work, money and finances, issues relating to society, and personal health). Participants listed people with whom they would discuss each life area (size) and whether these people would also discuss this area with them (reciprocity).

As studies suggest, healthy young people have social networks of at least 10–20 people (Macdonald, Hayes, & Baglioni, 2000) but often mention the same person in multiple areas (McFarlane et al., 1981); the cap of number of people spoken to in each life area was raised to ≤ 17 from the original 6. Participants were also asked to report the proportion of reciprocal relationships, that is, scoring "How many of these people would talk to you about the same life area?" from 1 (*none of them*) to 5 (*all of them*). Two variables were derived: (a) the number of relationships and (b) proportion of reciprocal relationships in each area, with higher scores reflecting greater social network size and reciprocity, respectively.

Subjective social and occupational experience. Indicators of social and cultural activity, valued occupation, political inclusion, and social acceptance were captured using the Social Inclusion Measure (SIM; Secker, Hacking, Kent, Shenton, & Spandler, 2009). Items such as "I have felt accepted by my friends" are rated for the preceding month from 1 (*not at all*) to 4 (*yes, definitely*). This 16-item measure was developed with people with serious mental health problems and

amended to ensure equal applicability to the normative "healthy" population. Three SIM items referring explicitly to mental health problems or services, for example, "I have been involved in a group, club or organization that is not just for people who use mental health services," were amended. Instead, participants responded in reference to the group they felt most strongly defines them (e.g., ethnicity and vocational status), thus assessing inclusion within other sub/cultures than that of their primary identification.

Hopefulness. Hope across life areas thought relevant to social inclusion (academic, work, social, family, romantic, and leisure) was captured using the Domain-Specific Hope Scale (DSHS; Sympson, 1999). Participants respond to eight items in each of six life areas, for example, "I can always get a date if I set my mind to it" (romantic hope), from 1 (*definitely false*) to 8 (*definitely true*). The DSHS achieved excellent internal reliability for healthy young people; overall $\alpha = 0.93$ and subscales ranging from 0.86 to 0.93 (Sympson, 1999). Higher scores reflect greater hopefulness.

Dysfunctional attitudes. Negative self-beliefs were measured using the Dysfunctional Attitudes Scale (Weissman & Beck, 1978). Dysfunctional attitudes, for example, "If you cannot do something well, there is little point in doing it at all," scored from 1 (*totally agree*) to 7 (*totally disagree*). The defeatist performance beliefs (occupational) and the need for approval (social) subscales have been found reliable with healthy young people (de Graaf, Roelofs, & Huibers, 2009; Horan et al., 2010), although one study suggested some subscale overlap (Prenoveau et al., 2009). Higher scores reflect greater dysfunctional attitudes.

Mood. Mood was measured using a global item (Abdel-Khalek, 2006); "Do you feel happy in general?" scored from 0 (*very unhappy*) to 10 (*very happy*). This item has high test-retest reliability over 1 week with young people ($r = .86$; Abdel-Khalek, 2006) and has been used to capture mood in both healthy and clinical populations (Badcock, Paulik, & Maybery, 2011; Brown, West, Loverich, & Biegel, 2011). This item correlates strongly and positively with multiple item happiness measures and strongly and negatively with negative affect and anxiety (Abdel-Khalek, 2006).

Demographics. Self-reported age, gender, ethnicity, and place of birth were also recorded.

Analysis

Data analysis was conducted in PASW (Version 20, IBM Corp., 2011) and Mplus (Version 6.0; Muthén & Muthén, 1998–2010). Factor analysis and structural equation modeling allow our hypotheses to be tested in a series of linked analyses. First, the multidimensional structure of social inclusion in a normative population, that is, the extent to which designated indicators of social inclusion "hang together"

(Cronbach & Meehl, 1955), was explored through factor analysis leading to a social inclusion measurement model. Using the factor model of social inclusion, covariates, predictors of social inclusion, and invariance of associations across age groups were then tested using structural equation modeling (Gregorich, 2006; Horn & McArdle, 1992). The structure of dysfunctional attitudes and domain-specific hopefulness were first explored and tested before inclusion in structural equation modeling. Good model fit was indicated by non-significant chi-square statistic (χ^2) or $\chi^2/\text{degrees of freedom}$ ratio of $\leq 2:1$, root mean square error of approximation (RMSEA) < 0.06 , standard root mean square residual (SRMR) < 0.05 , and comparative fit index (CFI) > 0.95 , and examining scree plots, interitem correlations and Cronbach α (Hu & Bentler, 1999; Schreiber, Nora, Stage, Barlow, & King, 2006; Tabachnick & Fidell, 2007).

Although people self-reporting current mental health problems were excluded to support first testing a “normative” social inclusion model, 72 participants self-reported a previous mental health problem and 68 stated “not sure.” These participants were included in order to represent a broad healthy population continuum. Post hoc invariance testing was performed to confirm that the inclusion of these participants was appropriate. It was found that the measurement model was equivalent, and thus findings from the full sample of 387 participants are presented here. Self-reporting a previous or possible mental health problem is not equivalent to a clinical diagnosis, and inclusion of people who have or do experience some form of mental distress actually best represents the general population (Moffitt et al., 2010).

Results

Social inclusion measurement model development

Missing values were observed for most variables ranging from 1% to 17% missing. Missing values analysis revealed no substantial patterns in missing data in relation to any demographic or study variables with two exceptions. More missing values were observed for items appearing later in the online questionnaire, deemed due to fatigue, and for participants not born in the United Kingdom or Republic of Ireland, deemed due to incomprehension or early exit due to eligibility concerns. Within measures, case-by-case mean substitution was used with missing data of $\leq 25\%$ to preserve present information (Little & Rubin, 1987; Schafer & Graham, 2002). Between variables, missing data was handled using full information likelihood estimation, which computes parameters using all present data and the implied missing data based on maximum likelihood (Johnson & Young, 2011). The majority of the study variables were positively skewed and nonnormal, requiring mean and variance adjusted weighted least squares (WLSMV) estimation with categorical variables and multiple linear regression with continuous variables (Finney & DiStefano, 2006; Muthén & Muthén, 1998–2010).

First, structures within each social inclusion measure were explored using individual exploratory factor analyses (EFAs). Using WLSMV estimation, EFA of the Social Relationship Scale (McFarlane et al., 1981; 12 items) resulted in a three-factor solution according to the scree plot and model fit indices. The third factor comprised only lower magnitude cross-loading items, with the first two factors comprising all network size and reciprocity items, respectively. Therefore, a two-factor solution, although subthreshold in fit, $\chi^2(43) = 195.93$, $p < .001$, CFI = 0.89, RMSEA = 0.11, was selected as preferable conceptually. Cronbach α for these two derived subscales was acceptable: social network size $\alpha = 0.73$ and social network reciprocity $\alpha = 0.71$ (with removal of money reciprocity).

An EFA of the SIM (Secker et al., 2009; 16 items) using WLSMV estimation resulted in a four-factor solution instead of the three conceptually derived subscales proposed by the authors. Despite a significant χ^2 goodness of fit test, $\chi^2(62) = 124.06$, $p < .001$, alternative model fit indices were excellent, χ^2/df ratio = 2.00, CFI = 0.98, RMSEA = 0.05, SRMR = 0.04, and the scree plot suggested four factors. The four factors were deemed to represent social contact, cultural inclusion, political inclusion, and belonging and meaningful occupation (Table 1). Two items had cross-loadings greater than 0.3 (“I have been to new places” and “I have felt that I am playing a useful part in society”), but were restricted to the factor with the higher loading for greater parsimony. The item “I have been involved in a group, club, or organization that is not just for [members of my group]” did not load > 0.3 on any factor and was excluded. Consideration of Cronbach α led to the removal of four further items to improve the internal reliability (Table 1), resulting in final Cronbach $\alpha = 0.80$ for social contact, $\alpha = 0.66$ for cultural inclusion, $\alpha = 0.72$ for political inclusion, and $\alpha = 0.75$ for belonging and meaningful occupation. An EFA of the six social inclusion indicators (social network size and reciprocity, social contact, cultural inclusion, political inclusion, and belonging and meaningful occupation) using maximum likelihood robust estimation suggested two factors, with a clear “break” in the scree plot (Figure 1) and excellent fit indices: $\chi^2(4) = 4.40$, $p = .35$, CFI = 1.00, RMSEA = 0.02, SRMR = 0.02, with no cross-loadings > 0.3 . The two-factor structure (Table 2) represents social inclusion as comprising one more objective, socially focused factor (“social activity”) and one more subjective, occupational, and community-focused factor (“community belonging”).

The social inclusion measurement model was created by re-specifying the two-factor model as a confirmatory factor analysis using maximum likelihood robust estimation with cross-loading paths fixed to zero. Model fit was excellent: $\chi^2(8) = 10.22$, $p = .25$, CFI = 0.99, RMSEA = 0.03, SRMR = 0.03. This structure partially supported the hypothesis that objective and subjective and social and occupational indicators would form separate factors, as social activity is a socially focused factor (composed of mainly objective items), and community belonging is mainly occupation or community focused (mixed objective and subjective items) as shown in Figure 2.

Table 1. Exploratory factor loadings (>.3) for individual Social Inclusion Measure items

Item	SC	CI	PI	BMO
I have friends I see or talk to every week.	.82			
My social life has been mainly related to [members of my group] (R). ^a	.36			
I have felt accepted by my friends.	.69			
I have been out socially with friends (e.g., to the cinema, restaurant, pub, clubs).	.70			
I have been involved in a group, club, or organization that is not just for [members of my group]. ^b		.69		
I have learned something about other peoples' cultures.		.54		.34
I have been to new places.		.32		
I have felt that some people look down on me because [I am a member of my group] (R). ^a		.41		
I have felt it was unsafe to walk alone in my neighborhood in daylight (R). ^a		.54		
I have done some cultural activities (e.g., gone to a library, museum, gallery, theatre, concert).			.81	
I have felt clear about my rights.			.71	
I have felt free to express my beliefs (e.g., political or religious beliefs).				.52
I have felt accepted by my family.				.38
I have felt accepted by my neighbors. ^a				.67
I have felt that I am playing a useful part in society.			.38	.75
I have felt that what I do is valued by others.				

Note: Items are adapted from the Social Inclusion Measure (Secker et al., 2009). SC, social contact; CI, cultural inclusion; PI, political inclusion; BMO, belonging and meaningful occupation; (R), reverse-scored item.

^aItems were removed from derived subscales to improve internal reliability.

^bThe item did not load onto any factor >.3.

The beliefs in social inclusion (BSI) model

The structures of domain-specific hopefulness and dysfunctional attitudes were first tested before specification of the BSI model. An EFA using WLSMV estimation for categorical data confirmed the 48 DSHS (Sympson, 2000) items form six

separate hope scales: academic, work, social, romantic, family, and leisure hope, with acceptable model fit, $\chi^2(855) = 1,991.05$, $p < .001$, CFI = 0.96, RMSEA = 0.06, and SRMR = 0.03. However, the scree plot indicated a break after two factors, and a subsequent EFA maximum likelihood robust estimation using the six subscale mean scores supported a two-

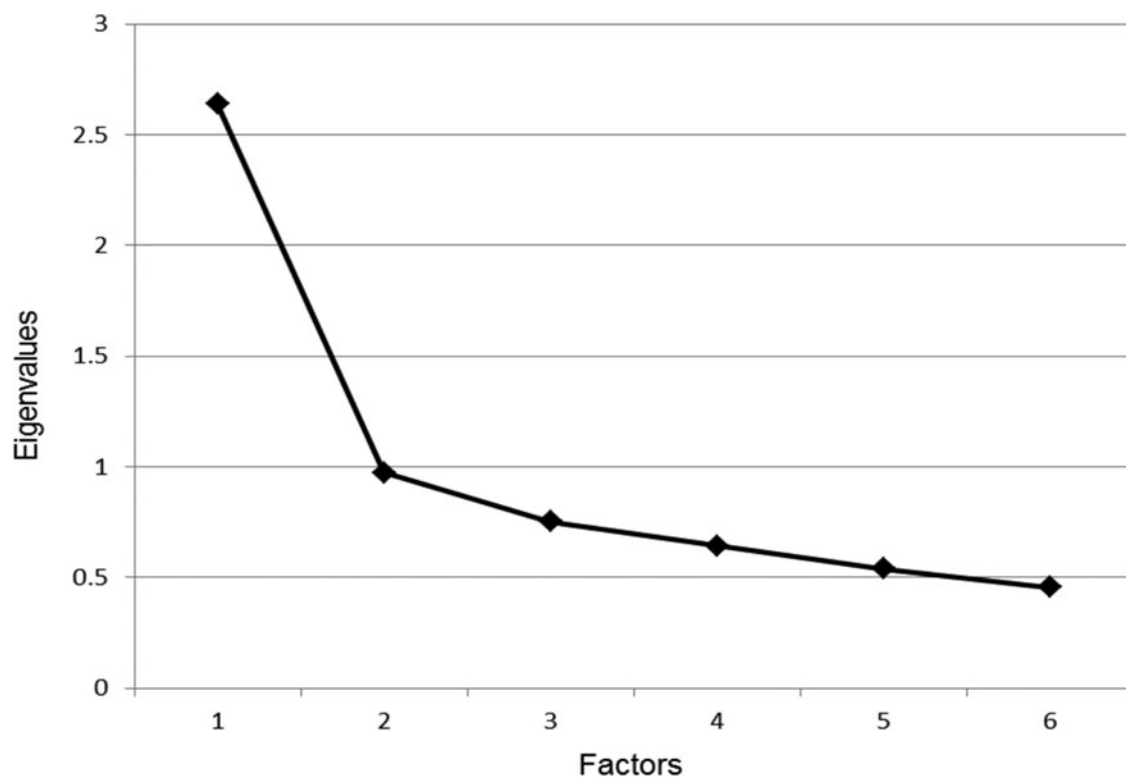


Figure 1. Scree plot showing factor eigenvalues for social inclusion indicators.

Table 2. Exploratory factor loadings (>.3) for social inclusion two factor solution

Subscale Indicator	Social Activity	Community Belonging	Present n (%)
Social network size	.54		382 (98.7)
Social network reciprocity	.64		348 (89.9)
Social contact	.73		338 (87.3)
Belonging and meaningful occupation		.98	340 (87.9)
Cultural inclusion		.30	342 (88.4)
Political inclusion		.36	339 (87.6)

factor structure, $\chi^2(8) = 15.78, p = .05$, comprising occupational hope (academic and work) and social hope (social, romantic, leisure, and family). Thus hopefulness was represented as two subscale scores: occupational hope (mean of 16 items; $\alpha = 0.89$) and social hope (mean of 32 items; $\alpha = 0.95$).

A confirmatory factor analysis with WLSMV estimation confirmed the fit of the two-factor, defeatist performance and need for approval, dysfunctional attitudes (Weissman & Beck, 1978) structure was subthreshold, $\chi^2(274) = 1,054.39, p < .001$, CFI = 0.90, RMSEA = 0.09, SRMR = 1.50. However, the scree plot supported a two-factor solution, further factors comprised only one or two theoretically incongruent cross-loading items, and Cronbach α was high for the defeatist performance ($\alpha = 0.92$) and need for approval ($\alpha = 0.82$) subscales; thus the two subscales were retained.

The BSI model was tested by regressing the two latent social inclusion variables onto hopefulness (social and occupational) and dysfunctional attitudes (need for acceptance and defeatist performance beliefs). Correlations between hopefulness and dysfunctional attitudes did not suggest significant multicollinearity (Field, 2009; Table 3).

This model (BSI.1) demonstrated good fit, $\chi^2/df = 2.11$, CFI = 0.94, RMSEA = 0.05, SRMR = 0.04, and an appropriate case to free parameter ratio of 9.68, albeit with a significant χ^2 test, $\chi^2(24) = 50.66, p = .001$. Occupational hope did not significantly predict social activity ($\beta = 0.00, b = 0.00, p = .95$), and fixing this path to zero did not significantly reduce model fit, $\Delta\chi^2 = 0.03(1), p > .10$; thus, it was removed. In the amended model (BSI.2), the pathway from need for approval to community belonging was only just significant ($\beta = 0.12, b = 0.08, p = .05$), but removing it significantly reduced model fit, $\Delta\chi^2 = 4.18(1), p < .05$; thus, it was retained. The fit of BSI.2 (depicted with standardized coefficients in Figure 2 and parameter estimates in Table 4) was good: $\chi^2(25) = 50.65, p = .001, \chi^2/df = 2.03$, CFI = 0.95, RMSEA = 0.05, SRMR = 0.04. BSI.2 suggests greater social hope, lesser defeatist performance beliefs, and, unexpectedly, greater need for approval predict social activity and community belonging are predicted by, with greater occupational hope also predicting community belonging. Individual paths represent mainly moderate effect sizes, and the model overall explained a large amount of variance in social activity ($R^2 = 41.8\%$) and community belonging ($R^2 = 53.7\%$; Cohen, 1988, 1992). A specificity of association was

found only for occupational hope and community belonging; all other self-beliefs in each domain (social and occupational) predicted both social inclusion domains.

A reverse model (BSI_{rev}) was computed by regressing all four self-beliefs onto the two social inclusion factors to ascertain whether the data are also consistent with social inclusion predicting self-beliefs. BSI_{rev} provided near equal fit to the original model, $\chi^2(25) = 51.17, p = .001$, but does not improve on explained variance in its dependent variables compared to BSI.2. In this model, community belonging ($\beta = -0.24, b = -0.38, p = .04$), but not social activity ($\beta = 0.14, b = 0.26, p = .27$), was associated with need for approval, which differs from BSI.2. It could be that need for approval drives people to seek greater social activity and community belonging (BSI.2), with greater community belonging also leading to remittance of need for approval (BSI_{rev}); however, the lack of association between social activity and need for approval (BSI_{rev}) is counterintuitive. Although BSI_{rev} cannot be fully discounted, BSI.2 has at least equivalent model properties and is theoretically superior due to the greater supposed degree of influence from beliefs to behaviors (Safran & Segal, 1996). A nonrecursive (reciprocal) model was considered and tested. This model again provided near equivalent fit, $\chi^2(25) = 49.86, p = .002$, to the original and reverse models, albeit with issues of power and stability with respect to residual variances. Model findings lent further statistical support to retaining the hypothesized model as parameters relating to paths from self-beliefs to social inclusion (i.e., as hypothesized) remained intact yet paths from social inclusion to self-beliefs (i.e., reciprocal) largely did not reach statistical significance.

BSI.2 was recomputed with mood as a covariate by regressing both social inclusion factors onto mood (BSI.3; see Table 5 for model key). Positive mood significantly predicted both social activity ($\beta = 0.18, b = 0.05, p = .02$) and community belonging ($\beta = 0.19, b = 0.06, p = .002$). Associations between dysfunctional attitudes, hope, and social inclusion changed little compared to BSI.2 (<0.1 change in standardized coefficients), and mood explained little additional variance (1% social activity and 0.1% in community belonging); thus, associations between self-beliefs and social inclusion are robust to the influence of mood.

Associations between gender and ethnicity and model variables were examined. When covarying gender, need for

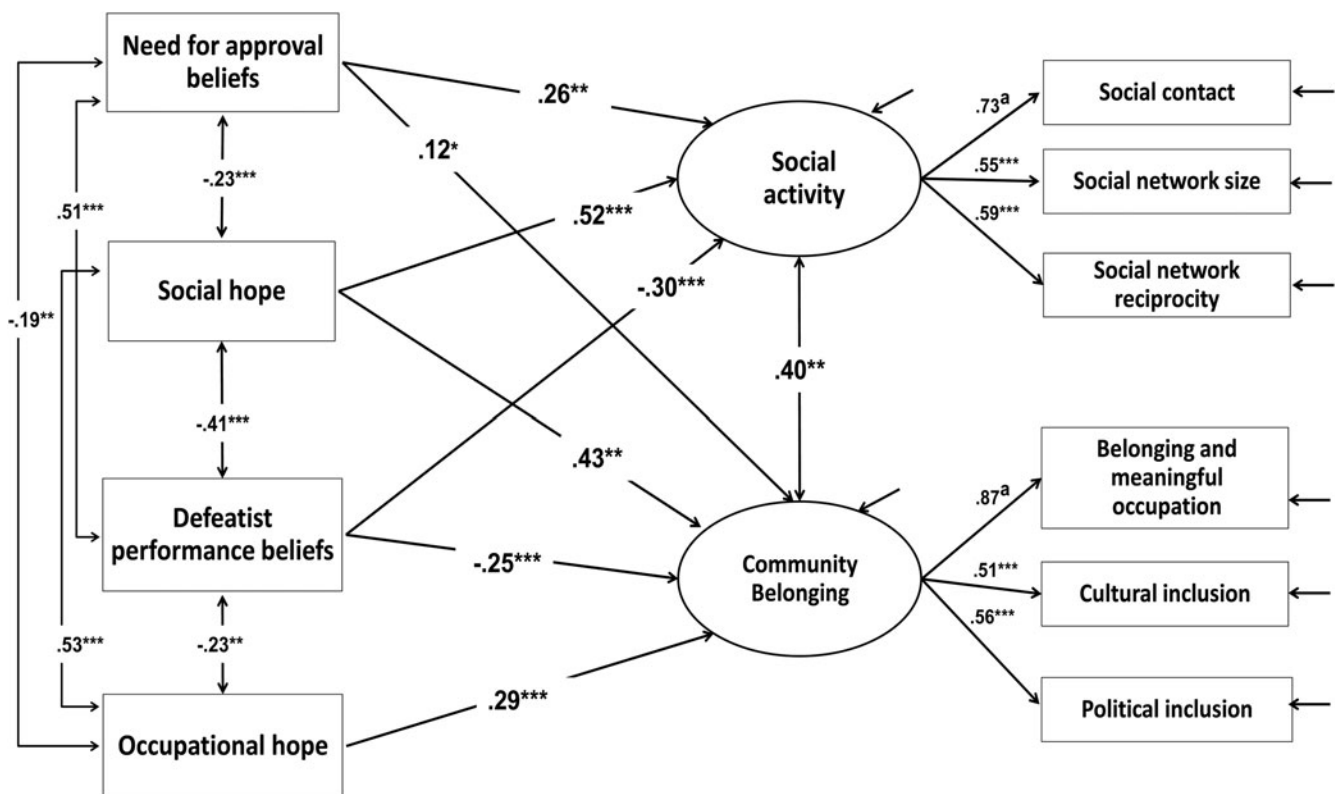


Figure 2. The beliefs in social inclusion model. Significance for factor loadings not shown for factor reference indicators as (unstandardized) factor loadings set at 1. Parameters are standardized path coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$.

approval marginally rather than significantly predicted community belonging ($\beta = 0.12$, $b = 0.07$, $p = .06$). All other parameters remained significant and changed little in magnitude (<0.1 change in standardized coefficients), and thus gender has negligible impact. Ethnicity was not associated with social inclusion and was not analyzed further. Due to greater missing data for people born outside the United Kingdom, birthplace (i.e., United Kingdom vs. other) was covaried (BSI.5). Being born in the United Kingdom was associated with greater social activity ($\beta = 0.15$, $b = 0.25$, $p = .03$), but there were no other changes to parameter estimates.

A protective effect of the hopeful self?

In order to investigate whether hope protects against the association between dysfunctional attitudes and social inclusion, grand mean-centered product terms were created and introduced as predictors of social inclusion: Defeatist Performance Beliefs \times Occupational Hope, Defeatist Performance Beliefs \times Social Hope, Need for Approval \times Social Hope, and Need for Approval \times Occupational Hope. The fit of this model (BSI.6) was excellent: $\chi^2(43) = 46.80$, $p = .32$; CFI = 0.99, RMSEA = 0.02, SRMR = 0.03. No interaction effects were significant with respect to social activity, but significant small interactions were observed for Defeatist Performance Beliefs \times Social Hope ($\beta = 0.23$, $b = 0.08$, $p = .02$), Defeatist Performance Beliefs \times

Occupational Hope ($\beta = -0.20$, $b = -0.08$, $p = .02$), and Need for Approval \times Occupational Hope ($\beta = 0.20$, $b = 0.09$, $p = .02$) with respect to community belonging. Interaction plots were created representing ± 1 SD for each self-belief. As a latent variable, community belonging has a mean and intercept of 0 and is represented on the y axis in standard deviation units of its measurement model reference indicator (i.e., belonging and meaningful occupation, $M = 2.98$, $SD = 0.72$).

To support the hypothesis that hope protects against the influence of negative self-beliefs, community belonging should be greater for high versus low hope when negative self-beliefs are high. As shown in Figure 3, high defeatist performance beliefs are associated with reduced community belonging only in the context of low social hope, suggesting high social hope is protective. Conversely, the findings did not support high occupational hope protecting against high defeatist performance beliefs, as community belonging was not greater when both defeatist performance beliefs and occupational hope were high (Figure 4).

Finally, despite the main positive association between need for approval and social inclusion overall, the findings still support a buffering effect of hope here (Figure 5). When occupational hope is high, high need for approval is associated with greater community belonging versus reduced community belonging in the context of high need for approval and low occupational hope.

Table 3. Descriptive statistics and bivariate correlations among hope (social and occupational) and dysfunctional attitudes (defeatist performance beliefs and need for approval) using listwise deletion

	<i>M</i> (<i>SD</i>)	Sample Range	Possible Range	Present <i>n</i> (%)	SH	OH	DP	NA
SH	5.23 (1.27)	1.46–7.75	1–8	338 (87.34)	1			
OH	6.03 (1.02)	2.25–7.94	1–8	331 (85.53)	.53***	1		
DP	3.29 (1.07)	1.07–6.60	1–7	322 (83.20)	-.40***	-.25***	1	
NA	4.09 (1.00)	1.20–6.60	1–7	320 (82.69)	-.23***	-.19**	.51***	1

Note: SH, social hope; OH, occupational hope; DP, defeatist performance beliefs; NA, need for approval.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Looking through the developmental lens

The sample was split into adolescents (14–18 years, $n = 152$) and young adults (19–36 years, $n = 235$) using age as a proxy for development. Developmental differences were tested using multigroup invariance testing in a series of hierarchical stages. First, the invariance of the measurement model was tested (social inclusion measurement model; i.e., equivalence of model fit, factor loadings, intercepts and residuals). Second, the invariance of the structural model (BSI.2) was tested (i.e., equivalence of factor means, variances, and covariances). As each additional element was constrained to equivalence and the new model compared to the previous step, a significant $\Delta\chi^2$ difference test implied significant difference and thus variance between groups (Widaman & Reise, 1997). Partial variance was accepted in the measurement model, in which some model parameters (e.g., intercepts) can vary between groups, as long as at least one indicator per factor was invariant other than the reference indicator used to define the latent variable scale (Muthén & Christofferson, 1981; Steenkamp & Baumgartner, 1998).

Invariance testing (Table 6) confirmed that the two-factor social inclusion structure fits well within (dimensional invariance) and equivalently across (configural invariance) adolescents and young adults, and factors have equivalent meanings (equivalent factor loadings; weak invariance). When testing equivalence in the meaning of scores (intercepts; strong invariance), the χ^2 difference test revealed a significant difference, $\Delta\chi^2(4) = 12.38$, $p < .02$; the source being the intercept for the social network reciprocity (M adolescent = 3.46, M adult = 3.77). Freeing this intercept resulted in a nonsignificant difference in comparison to the preceding model, $\Delta\chi^2(3) = 4.05$, $p > .05$, confirming partial strong invariance (Table 6). Testing the strict partial invariance model confirmed that the between group difference relates only to the social network reciprocity intercept and not residual variances. Confirmation of partial measurement invariance allowed progression to testing structural invariance (Muthén & Christofferson, 1981).

The factor covariance, variances, and means were successively constrained to equivalence across groups and model fit compared. Factor means and variances were equivalent.

Table 4. Beliefs in social inclusion model (BSI.2) parameter estimates

Parameter	Stand.	Unstand.	SE	<i>p</i>	<i>R</i> ²
Measurement Model					
Social activity					.42
Social contact	0.73	1	—	—	.54
Social network size	0.55	14.78	2.14	<.001	.30
Social network reciprocity	0.59	1.07	0.15	<.001	.35
Community belonging					.54
Belonging and meaningful occupation	0.87	1	—	—	.76
Cultural inclusion	0.51	0.60	0.08	<.001	.26
Political inclusion	0.56	0.63	0.08	<.001	.31
Structural Model					
Covariance social activity and community belonging	0.40	0.07	0.02	.001	
Social activity on defeatist performance beliefs	-0.30	-0.15	0.04	<.001	
Social activity on need for approval beliefs	0.26	0.14	0.05	.003	
Social activity on social hope	0.52	0.22	0.04	<.001	
Community belonging on defeatist performance beliefs	-0.25	-0.15	0.04	<.001	
Community belonging on need for approval beliefs	0.12	0.08	0.04	.05	
Community belonging on social hope	0.43	0.21	0.03	<.001	
Community belonging on occupational hope	0.29	0.18	0.04	<.001	

Table 5. Model key

Model Number	Model Description
BSI.1	Social activity and community belonging (LVs, MM) regressed onto four self-beliefs (OV, SM): social hope, occupational hope, need for approval and defeatist performance; covariances among self-beliefs estimated
BSI.2	Final BSI model. As BSI.1 except path between occupational hope (OV) and social activity (LV) set to zero
BSI _{rev}	Reverse model with SM regressed onto MM
BSI.3	BSI.2 with addition of mood (OV) as covariate MM regressed onto mood
BSI.4	BSI.2 with addition of gender (OV) as covariate MM regressed onto gender
BSI.5	BSI.2 with addition of birthplace (OV) as covariate MM regressed onto birthplace
BSI.6	BSI.2 with addition of centered self-belief interaction terms in SM; Defeatist Performance Beliefs × Occupational Hope, Defeatist Performance Beliefs × Social Hope, Need For Approval × Social Hope, & Need For Approval × Occupational Hope
BSI.2 _{adolescent}	BSI.2 invariance model with adolescents (14–18 years) compared to young adults (19–36 years)
BSI.2 _{adult}	BSI.2 parameters with young adults (19–36 years) compared to adolescents (14–18 years)

Note: BSI, Beliefs in social inclusion; LV, latent variables; MM, measurement model; OV, observed variable; SM, structural model.

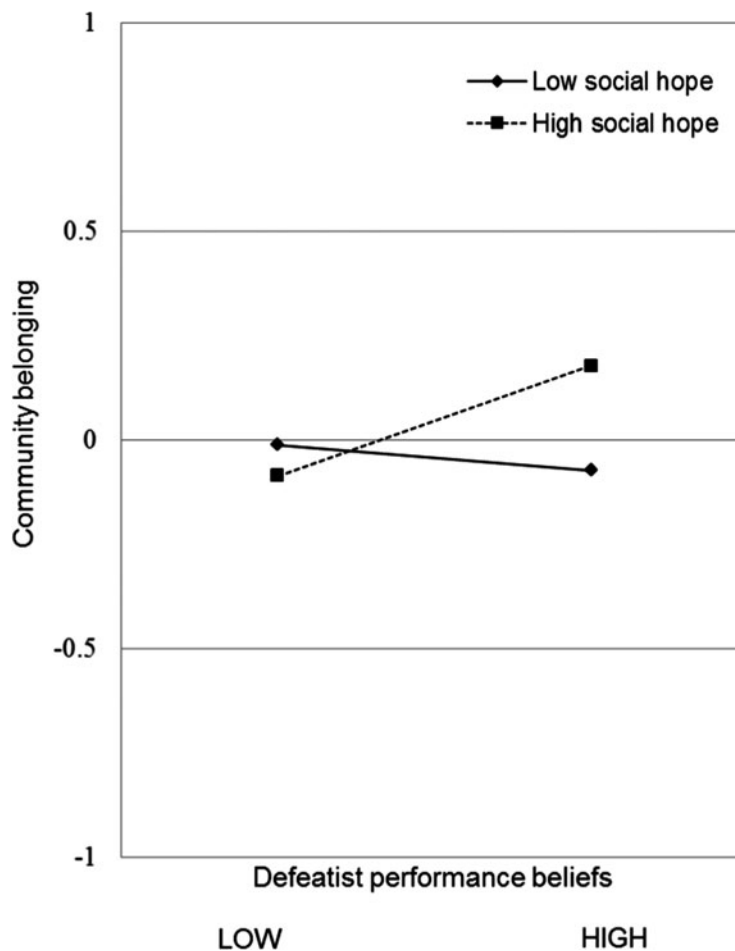


Figure 3. Interaction between defeatist performance beliefs and social hope in their association with community belonging. The latent community belonging variable is represented on the y axis in standard deviations of the measurement model reference indicator (belonging and meaningful occupation, $M = 2.98$, $SD = 0.72$).

However, the covariance between social activity and community belonging for adolescents (BSI.2 adolescent; $\beta = 0.42$, $b = 0.13$, $p = .002$) was significantly reduced compared to young adults (BSI.2 adult; $\beta = 0.88$, $b = 0.25$, $p > .001$),

suggesting greater interrelatedness in the two social inclusion domains for young adults than adolescents.

In BSI.2 adolescents, neither defeatist performance nor need for approval beliefs predicted social activity (defeatist

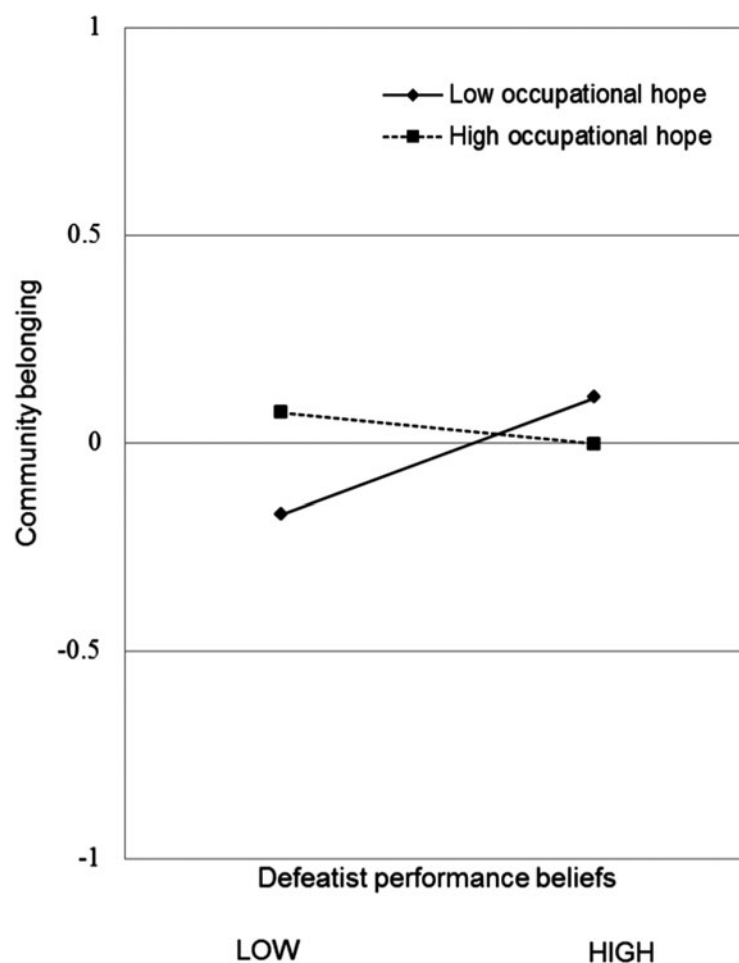


Figure 4. Interaction between defeatist performance beliefs and occupational hope in their association with community belonging. The latent community belonging variable is represented on the y axis in standard deviations of the measurement model reference indicator (belonging and meaningful occupation, $M = 2.98$, $SD = 0.72$).

performance: $\beta = -0.20$, $b = -0.11$, $p > .05$, need for approval: $\beta = 0.13$, $b = 0.07$, $p > .05$) or community belonging (defeatist performance: $\beta = 0.07$, $b = 0.04$, $p > .05$, need for approval: $\beta = -0.04$, $b = -0.02$, $p > .05$). All paths were significant in model BSI.2 adult. Wald χ^2 tests were used to ascertain whether these associations with each self-belief were significantly different between groups. Wald tests confirmed that need for approval ($p = .049$) and defeatist performance beliefs ($p = .001$) predicted community belonging to a significantly greater extent for young adults compared to adolescents. Occupational hope predicted community belonging to a greater extent in BSI.2 adolescent ($\beta = 0.44$, $b = 0.26$, $p < .001$) than BSI.2 adult ($\beta = 0.22$, $b = 0.14$, $p < .05$), but this difference did not reach statistical significance ($p = .13$). Group differences remained when controlling for mood.

Analysis of mental health status

Multigroup invariance testing was used to explore any differences between those participants self-reporting none ($n = 246$) versus previous or possible (“not sure”) mental health problems

($n = 140$). The results suggested that the social inclusion measurement model retains the same structure within and across both groups, although social network size was greater in the “none” group. Structural invariance testing suggested decreased social activity and community belonging in the “previous/possible” group, plus greater variance within these social inclusion factors and covariance between them. Parameter comparison suggested that higher need for approval only predicts increased community belonging for people with no history of mental health problems, whereas social hope predicts social activity to a lesser extent, as compared to the previous/possible group. These findings confirm that the BSI.2 model equally represents social inclusion for people reporting previous or possible compared to none, while providing preliminary evidence of some group differences.

Discussion

The BSI model

We present a novel exploratory model of social inclusion and its self-belief predictors within a healthy young population.

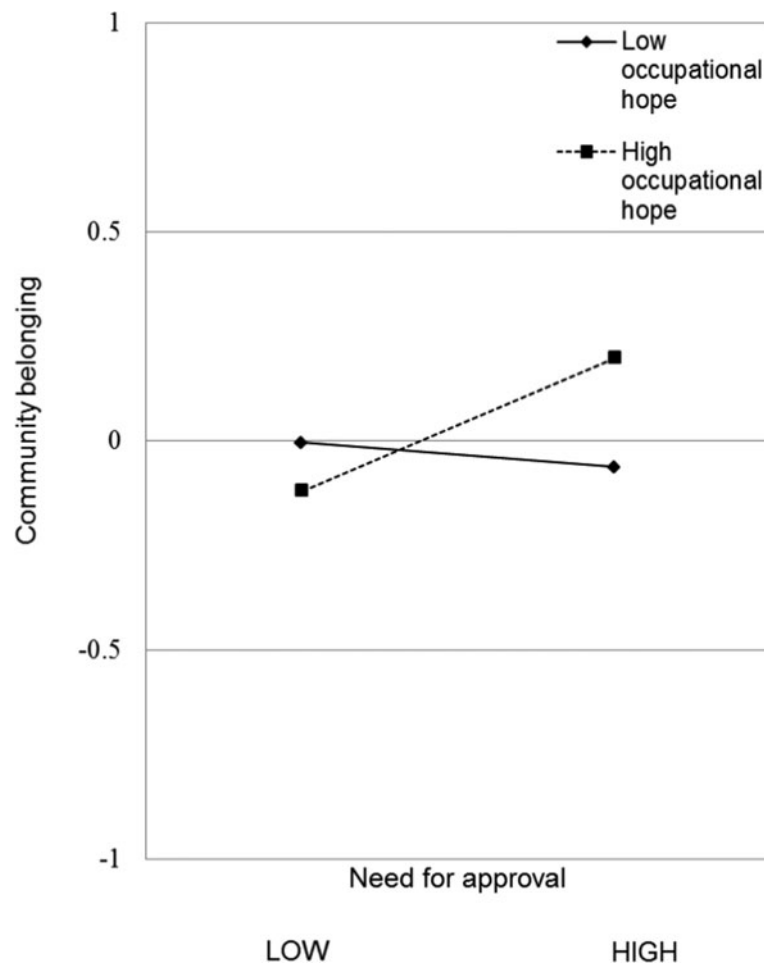


Figure 5. Interaction between need for approval and occupational hope in their association with community belonging. The latent community belonging variable is represented on the y axis in standard deviations of the measurement model reference indicator (belonging and meaningful occupation, $M = 2.98$, $SD = 0.72$).

The BSI.2 suggests that social inclusion can be represented as two separate but related domains of social activity and community belonging, which are predicted by hopeful and dysfunctional beliefs about the self related to social/interpersonal and occupational life domains independently of mood, gender, and ethnicity. Social hope, need for approval, and defeatist performance beliefs predicted both social activity and community belonging; occupational hope predicted only community belonging. The empirically explored structure of social inclusion is in keeping with its conceptualization as a multidimensional construct comprising indices of social, occupational, community activity, and subjective experience (Hall, 2009; Morgan et al., 2007; Parr et al., 2004). The incomplete separation of indicators into social versus occupational domains was not as predicted but is understandable considering that most or even all occupations are enacted in a social sphere (Grant & Parker, 2009).

The associations between defeatist performance beliefs, social and occupational hope, and social inclusion follow theory that people's beliefs about themselves influence their behavior (Safran & Segal, 1996), that hopefulness motivates

and sustains goal-directed action (Snyder, 2002), and that dysfunctional attitudes lead to withdrawal from activity (Beck et al., 2009). Associations between all self-beliefs and both social inclusion domains (with the exception of occupational hope, which did not predict social activity) supports the notion that domain-specific self-beliefs predict performance and experience in the respective domain (Snyder, 2002), albeit in other domains as well.

Need for approval, ostensibly a negative self-belief that predicts greater symptoms in psychosis (Beck & Rector, 2005; Lincoln et al., 2010), unexpectedly predicted greater social activity and community belonging in the current healthy population. A particularly low level of need for approval does not explain this finding; the mean in the current sample exceeds that of previous healthy young samples (de Graaf et al., 2009) and is more akin to young people experiencing depression (Whisman & Friedman, 1998). We wonder therefore whether even high need for approval can be adaptive for healthy young people (Abela & Hankin, 2008) if perchance, and perhaps unlike people with mental health problems, they believe they can attain the interpersonal approval so desired. Our data are partially

Table 6. Multigroup analysis of the beliefs in social inclusion model (BSI.2) comparing adolescents (14–18 years, $n = 152$) and young adults (19–36 years, $n = 235$)

Model	χ^2	df	χ^2/df	$p(\chi^2)$	CFI	RMSEA	SRMR	$\Delta\chi^2(df)$	$p(\Delta\chi^2)$
Single Group (Dimensional Invariance)									
Younger	7.67	8	0.96	.47	1.00	0.00	0.04	—	—
Older	6.78	8	0.85	.56	1.00	0.00	0.03	—	—
Measurement Invariance									
Configural	14.29	16	0.89	.58	1.00	0.00	0.04	—	—
Weak	17.26	20	0.86	.64	1.00	0.00	0.05	2.78 (4)	>.20
Strong (partial)	20.94	23	0.91	.58	1.00	0.00	0.06	4.05 (3)	>.20
Strict (partial)	22.99	29	0.79	.78	1.00	0.00	0.07	2.41 (6)	>.20
Structural Invariance									
Equal factor covariance	27.14	30	0.90	.62	1.00	0.00	0.11	5.90 (1)	<.05
Equal factor variance	23.14	31	0.75	.84	1.00	0.00	0.07	0.13 (2)	>.95
Equal factor means	27.51	31	1.92	.89	1.00	0.00	0.08	5.16 (2)	>.05

consistent with this idea, for this positive predictive effect of need for approval disappeared when testing the model only for people reporting previous or possible mental health problems, although no interaction was observed between need for approval and social hope in our sample.

Evidence for our hypothesis that hopefulness protects against the detrimental impact of dysfunctional attitudes (Fredrickson, 1998) was mixed. No interactions were observed with respect to social activity. The association between defeatist performance beliefs and community belonging was reduced when social hope was high, and the association with need for approval was particularly positive when occupational hope was high. However, when occupational hope was low, high defeatist performance beliefs actually predicted increased community belonging. We hypothesize that people with high defeatist performance beliefs may be defensively pessimistic and create unrealistically low targets and expectations for themselves, a strategy which improves anxious peoples' goal attainment (Norem & Chang, 2002). Thus, if people with high defeatist performance beliefs are anxious about failure, the exhibition of low occupational hope may be a defensive pessimist strategy that actually improves their perceived community belonging.

A developmental lens

We hypothesized that more objective indices of social activity would be greater for adolescents, and more subjective, occupational, and community indicators of inclusion would be greater for young adults, due to the former's developmental prioritization of peer relationships and the latter's prioritization of occupation and community involvement (Hartup & Stevens, 1997; Iarocci et al., 2008). However, levels of social activity and community belonging did not differ between groups. Progressively, complex developmental transitions and delays in when it is normative to achieve certain develop-

mental milestones (Arnett, 2000; Farre et al., 2015) may have had an impact here. The inclusion of young adults aged up to 36 years is a key strength of the current paper. When considering "developmentally appropriate" interventions, previous work has tended to focus more purely on adolescents or perhaps the youngest of young adults. Associations between social inclusion domains did differ by age; reduced covariance between social activity and community belonging was observed for adolescents, perhaps suggesting that community belonging is associated with additional unmodeled factors in adolescents, such as school connectedness.

Associations between beliefs about the self and social inclusion also differed across age. Despite lower absolute levels compared to adolescents, defeatist performance beliefs (negatively) and need for approval (positively) predicted social inclusion only for young adults. Our findings are consistent with the theory that negative self-beliefs influence behaviors more when people reach cognitive maturity (i.e., early adulthood; D'Alessandro & Burton, 2006). Theory suggests that need for approval is adaptive for adolescents but confers vulnerability when no longer considered normative (Abela & Hankin, 2008). Therefore, evolving societal conceptualizations of what is normative for modern young people (Arnett, 2000) may delay and prolong the social benefits of need for approval, meaning that it may have negligible impact for adolescents and a positive impact for young adults before becoming pervasive later in life. We wonder whether the extent to which both adolescents and young adults now live their lives online, thus seeking and attaining instantaneous approval from others, may itself normalize prolonged need for approval. Use of online socializing may also be greater for young people exhibiting greater need for approval (Weidman et al., 2012), which may contribute to us not observing a detrimental impact of need for approval in the present study. Future work is needed to replicate these age differences and consider both younger

adolescents and older adults to understand the potential impact of a hopeful and dysfunctional self-view across the life course. Future work should also consider including online social experiences and activities when modeling social inclusion due to their importance in youth; we acknowledge the absence of this as a limitation of the current work.

No a priori predictions were made regarding age-related differences in hopefulness; however, our results point toward a greater association between hopefulness and social inclusion in adolescence. We hypothesize that repeated experiences of failure or struggle to attain goals may make young adults more aware of their limitations and blockages and thus undermine the benefits of hope (Byrne, 1998). Adolescents, in contrast, are less realistic and overendorse their own competence (Schunk & Meece, 2006), which may mean they strive further to achieve even more ambitious goals (Lachman & Burack, 1993; Snyder, Lehman, Kluck, & Monsson, 2006). It may also be that adolescents' goals are more synchronous, whereas for young adults more conflicting goals (e.g., family vs. friends vs. work) may limit the impact of even high hopefulness (Shah & Kruglanski, 2000).

Limitations

Future work should involve cross-validation of the BSI model to further refine the construct and increase generalizability (MacCallum & Austin, 2000) and to test its relevance to people with clinical diagnoses. We have some evidence that domain-specific hopefulness is relevant to predicting social inclusion for young people experiencing psychosis (Berry & Greenwood, 2015), but explorations of associations with dysfunctional attitudes and other negative self-beliefs are warranted. The limitations of the current study include an inability with the present sample size to conduct higher order factor analysis of all social inclusion questionnaire items, a method that may have resulted in greater separation between social and occupational and subjective and objective indicators. A greater focus on objective measures of functioning is also warranted as recent research suggests actual weekly hours spent in constructive economic and other structured activity represents an important way to conceptualize social recovery in clinical populations with meaningful comparisons in the general population (Hodgekins et al., 2015).

Although our present research question focused on testing whether current data were consistent with self-beliefs influencing social inclusion, a reciprocal (nonrecursive) model was specified. Despite some statistical support for the hypothesized direction of effects from reciprocal direction model test-

ing, current data (which were cross-sectional and did not include instrumental variables) were not collected to facilitate testing or comparing reciprocal effects. Future research could focus on increasing understandings of potential cyclical associations between self-beliefs and social inclusion perhaps using experience sampling methodology to further explore temporal predictive associations between these variables.

Finally, although our present focus was on individual-level predictors of social inclusion in the context of a capacity-building approach, we acknowledge that social inclusion is an interpersonal construct that operates within societal structures, and their absence is a limitation of the current study. A future focus on individual experiences and trajectories of social inclusion within the wider social and societal context, for example, considering school, peer, socioeconomic, and neighborhood influences, is encouraged. We have some evidence that relationships with professionals may support hopefulness and social inclusion for young people experiencing psychosis (Berry & Greenwood, 2015). Furthermore, clinical research suggests, in addition to beliefs about the self, neurocognition, social cognition, and metacognition are relevant to social and occupational functioning, and thus their inclusion would arguably improve prediction of social inclusion across populations. In addition, there was increased chance of attrition of people not born in the United Kingdom in the current research, and consequently, uncertainty regarding the generalizability of current findings to those born outside of the United Kingdom.

Recommendations for further research and practice

Youth and mental health professionals should be aware that in adolescence, the absence of hopefulness, rather than the presence of dysfunctional attitudes, may especially increase withdrawal from social activity and reduced sense of community belonging. Social exclusion is a clear risk factor for mental health problems (Fowler et al., 2010; Kessler et al., 2007) and experiencing social disability itself then reinforces low hopefulness (Cohn, 1978), identifying young people with low hope and reduced social inclusion is especially important. There is emerging evidence too that preventative interventions, which traditionally may have focused on negating risks, may be more effective if focused on promoting strengths such as hopefulness (Kwon, Birrueta, Faust, & Brown, 2015). Our evidence supports broadening the scope of such preventative interventions in youth beyond the more commonly espoused foci of mood, general well-being, and academic achievement or treating mental health problems, toward the improvement of hope and young people's social inclusion.

References

- Abdel-Khalek, A. M. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality*, *34*, 139–150. doi:10.2224/sbp.2006.34.2.139
- Abela, J. R. Z., & Hankin, B. L. (2008). Cognitive vulnerability to depression in children and adolescents: A developmental psychopathology perspective. In J. R. Z. Abela & B. L. Hankin (Eds.), *Handbook of depression in children and adolescents* (pp. 35–78). New York: Guilford Press.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*, 469–480. doi:10.1037/0003-066X.55.5.469
- Badcock, J. C., Paulik, G., & Maybery, M. T. (2011). The role of emotion regulation in auditory hallucinations. *Psychiatry Research*, *185*, 303–308. doi:10.1016/j.psychres.2010.07.011

- Beck, A. T., Epstein, N., & Harrison, R. (1983). Cognitions, attitudes and personality dimensions in depression. *British Journal of Cognitive Psychotherapy*, *1*, 1–16.
- Beck, A. T., & Rector, N. A. (2005). Cognitive approaches to schizophrenia: Theory and therapy. *Annual Review of Clinical Psychology*, *1*, 577–606.
- Beck, A. T., Rector, N. A., Stolar, N., & Grant, P. M. (2009). *Schizophrenia: Cognitive theory, research and therapy*. New York: Guilford Press.
- Begen, F. M., & Turner-Cobb, J. M. (2014). Benefits of belonging: Experimental manipulation of social inclusion to enhance psychological and physiological health parameters. *Psychology and Health*, *30*, 568–582. doi:10.1080/08870446.2014.991734
- Belle, D. (1987). Gender differences in the social moderators of stress. In R. C. Barnett, L. Biener, & G. K. Baruch (Eds.), *Gender and stress* (pp. 257–277). New York: Free Press.
- Bentler, P. M., & Chou, C.-P. (1987). Practical issues in structural modeling. *Sociological Methods & Research*, *16*, 78–117. doi:10.1177/0049124187016001004
- Berry, C., & Greenwood, K. (2015). Hope-inspiring therapeutic relationships, professional expectations and social inclusion for young people with psychosis. *Schizophrenia Research*, *168*, 153–160. doi:10.1016/j.schres.2015.07.032
- Brown, K. W., West, A. M., Loverich, T. M., & Biegel, G. M. (2011). Assessing adolescent mindfulness: Validation of an adapted Mindful Attention Awareness Scale in adolescent normative and psychiatric populations. *Psychological Assessment*, *23*, 1023–1033. doi:10.1037/a0021338
- Bruegel, I. (2005). *Social capital and feminist critique*. In J. Franklin (Ed.), *Women and social capital*. Working Paper No. 12 (pp. 4–17). London: Families & Social Capital ESRC Research Group.
- Bynner, J. (2005). Re-thinking the youth phase of the life course? The case for the concept of emergent adulthood. *Journal of Youth Studies*, *8*, 367–384.
- Byrne, M. D. (1998). Taking a computational approach to aging: The SPAN theory of working memory. *Psychology and Aging*, *13*, 309–322. doi:10.1037/0882-7974.13.2.309
- Campbell, C., & McLean, C. (2003). Social capital, local community participation and the construction of Pakistani identities in England: Implications for health inequalities policies. *Journal of Health Psychology*, *8*, 247–262. doi:10.1177/1359105303008002668
- Carstensen, L. L. (1991). Selectivity theory: Social activity in life-span context. In K. Warner Schaie (Ed.), *Annual Review of Gerontology and Geriatrics: Vol. 11. Behavioral Science and Aging* (pp. 195–217). New York: Springer.
- Cobigo, V., Ouellette-Kuntz, H., Lysaght, R., & Martin, L. (2012). Shifting our conceptualization of social inclusion. *Stigma Research and Action*, *2*, 75–84.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155–159. doi:10.1037/0033-2909.112.1.155
- Cohen Kadosh, K., Linden, D. E. J., & Lau, J. Y. (2013). Plasticity during childhood and adolescence: Innovative approaches to investigating neurocognitive development. *Developmental Science*, *16*, 574–583. doi:10.1111/desc.12054
- Cohn, R. M. (1978). The effect of employment status change on self-attitudes. *Social Psychology*, *41*, 81–93.
- Compton, W. C. (2005). *An introduction to positive psychology*. Boston: Wadsworth.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Corrigan, P. W., & Buican, B. (1995). The construct validity of subjective quality of life for the severely mentally ill. *Journal of Nervous and Mental Disease*, *183*, 281–285. doi:10.1097/00005053-199505000-00001
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, *52*, 281–302. doi:10.1037/h0040957
- D'Alessandro, D., & Burton, K. (2006). Development and validation of the Dysfunctional Attitudes Scale for children: Tests of Beck's cognitive diathesis-stress theory of depression, of its causal mediation component, and of developmental effects. *Cognitive Therapy and Research*, *30*, 335–353. doi:10.1007/s10608-006-9046-5
- de Graaf, L. E., Roelofs, J., & Huibers, M. J. H. (2009). Measuring dysfunctional attitudes in the general population: The Dysfunctional Attitude Scale (Form A) Revised. *Cognitive Therapy and Research*, *33*, 345–355. doi:10.1007/s10608-009-9229-y
- Department of Health. (2011). *No health without mental health: A cross-government mental health outcomes strategy for people of all ages*. London: Author
- Esteves, M., Scoloveno, R. L., Mahat, G., Yarcheski, A., & Scoloveno, M. A. (2013). An integrative review of adolescent hope. *Journal of Pediatric Nursing*, *28*, 105–113. doi:10.1016/j.pedn.2012.03.033
- Farre, A., Wood, V., Rapley, T., Parr, J. R., Reape, D., & McDonagh, J. E. (2015). Developmentally appropriate healthcare for young people: A scoping study. *Archives of Disease in Childhood*, *100*, 144–151.
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage.
- Finney, S. J., & DiStefano, C. (2006). Non-normal and categorical data in structural equation modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: A second course* (pp. 269–314). Greenwich, CT: Information Age.
- Fowler, D. G., Hodgekins, J., Arena, K., Turner, R., Lower, R., Wheeler, K., Corlett, E., . . . Wilson, J. (2010). Early detection and psychosocial intervention for young people who are at risk of developing long term socially disabling severe mental illness: Should we give equal priority to functional recovery and complex emotional dysfunction as to psychotic symptoms. *Clinical Neuropsychiatry*, *7*, 63–71.
- Fowler, D., Hodgekins, J., Howells, L., Millward, M., Ivins, A., Taylor, G., . . . Macmillan, I. (2009). Can targeted early intervention improve functional recovery in psychosis? A historical control evaluation of the effectiveness of different models of early intervention service provision in Norfolk 1998–2007. *Early Intervention in Psychiatry*, *3*, 282–288. doi:10.1111/j.1751-7893.2009.00146.x
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, *2*, 300–319. doi:10.1037/1089-2680.2.3.300
- Freund, A. M., Hennecke, M., & Riediger, M. (2010). Age-related differences in outcome and process goal focus. *European Journal of Developmental Psychology*, *7*, 198–222. doi:10.1080/17405620801969585
- Gilman, R., Dooley, J., & Florell, D. (2006). Relative levels of hope and their relationship with academic and psychological indicators among adolescents. *Journal of Social and Clinical Psychology*, *25*, 166–178. doi:10.1521/jscp.2006.25.2.166
- Grant, A. M., & Parker, S. K. (2009). Redesigning work design theories: The rise of relational and proactive perspectives. *Academy of Management Annals*, *3*, 317–375.
- Gregorich, S. E. (2006). Do self-report instruments allow meaningful comparisons across diverse population groups? Testing measurement invariance using the confirmatory factor analysis framework. *Medical Care*, *44*, S78–S94. doi:10.1097/01.mlr.0000245454.12228.8f
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing*, *10*, 235–244. doi:10.1016/S0883-9417(96)80029-X
- Halamandaris, K. F., & Power, K. G. (1997). Individual differences, dysfunctional attitudes, and social support: A study of the psychosocial adjustment to university life of home students. *Personality and Individual Differences*, *22*, 93–104. doi:10.1016/S0191-8869(96)00175-4
- Hall, S. A. (2009). The social inclusion of people with disabilities: A qualitative meta-analysis. *Journal of Ethnographic & Qualitative Research*, *3*, 162–173.
- Harris, A. (2010). Young people, everyday civic life and the limits of social cohesion. *Journal of Intercultural Studies*, *31*, 573–589. doi:10.1080/07256868.2010.513424
- Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin*, *121*, 355–370. doi:10.1037/0033-909.121.3.355
- Hill, P. L., Allemand, M., Grob, S. Z., Peng, A., Morgenthaler, C., & Käppler, C. (2013). Longitudinal relations between personality traits and aspects of identity formation during adolescence. *Journal of Adolescence*, *36*, 413–421.
- Hodgekins, J., French, P., Birchwood, M., Mugford, M., Christopher, R., Marshall, M., . . . Fowler, D. (2015). Comparing time use in individuals at different stages of psychosis and a non-clinical comparison group. *Schizophrenia Research*, *161*, 188–193.
- Horan, W. P., Rassovsky, Y., Kern, R. S., Lee, J., Wynn, J. K., & Green, M. F. (2010). Further support for the role of dysfunctional attitudes in models of real-world functioning in schizophrenia. *Journal of Psychiatric Research*, *44*, 499–505. doi:10.1016/j.jpsychires.2009.11.001
- Horn, J. L., & McArdle, J. J. (1992). A practical and theoretical guide to measurement invariance in aging research. *Experimental Aging Research*, *18*, 117–144. doi:10.1080/03610739208253916
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55. doi:10.1080/10705519909540118
- Iarocci, G., Yager, J., Rombough, A., & McLaughlin, J. (2008). The development of social competence among persons with Down syndrome: From

- survival to social inclusion. *Retardation*, 35, 87–119. doi:10.1016/S0074-7750(07)35003-9
- IBM Corp. (2011). IBM SPSS statistics for Windows (version 20.0) [Computer software]. New York: Author.
- Johnson, D. R., & Young, R. (2011). Toward best practices in analyzing datasets with missing data: Comparisons and recommendations. *Journal of Marriage and Family*, 73, 926–945. doi:10.1111/j.1741-737.2011.00861.x
- Kahn, J. H. (2006). Factor analysis in counseling psychology research, training, and practice: Principles, advances, and applications. *Counseling Psychologist*, 34, 684–718. doi:10.1177/0011000006286347
- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry*, 20, 359–364. doi:10.1097/YCO.0b013e32816ebc8c
- Kwon, P. (2002). Hope, defense mechanisms, and adjustment: Implications for false hope and defensive hopelessness. *Journal of Personality*, 70, 207–231. doi:10.1111/1467-6494.05003
- Kwon, P., Birrueta, M., Faust, E., & Brown, E. R. (2015). The role of hope in preventative interventions. *Social and Personality Psychology Compass*, 9, 696–704. doi:10.1111/spc3.12227
- Lachman, M. E., & Burack, O. R. (1993). Planning and control processes across the lifespan: An overview. *International Journal of Behavioral Development*, 16, 131–143. doi:10.1177/016502549301600203
- Levitas, R. (1998). *The inclusive society?* Basingstoke: Palgrave.
- Lincoln, T. M., Mehl, S., Ziegler, M., Kesting, M.-L., Exner, C., & Rief, W. (2010). Is fear of others linked to an uncertain sense of self? The relevance of self-worth, interpersonal self-concepts, and dysfunctional beliefs to paranoia. *Behavior Therapy*, 41, 187–197. doi:10.1016/j.beth.2009.02.004
- Little, R. J. A., & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York: Wiley.
- Lloyd, C., Tse, S., & Deane, F. P. (2006). Community participation and social inclusion: How practitioners can make a difference. *Advances in Mental Health*, 5, 185–194. doi:10.5172/jamh.5.3.185
- Long, D. M., & Hayes, S. C. (2014). Acceptance, mindfulness, and cognitive reappraisal as longitudinal predictors of depression and quality of life in educators. *Journal of Contextual Behavioral Science*, 3, 38–44.
- Lowndes, V. (2000). Women and social capital: A comment on Hall's "Social capital in Britain." *British Journal of Political Science*, 30, 533–537.
- MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, 51, 201–226. doi:10.1146/annurev.psych.51.1.201
- Macdonald, E. M., Hayes, R. L., & Baglioni, Jr., A. J. (2000). The quantity and quality of the social networks of young people with early psychosis compared with closely matched controls. *Schizophrenia Research*, 46, 25–30. doi:10.1016/S0920-9964(00)00024-4
- Mahar, A. L., Cobigo, V., & Stuart, H. (2013). Conceptualizing belonging. *Disability and Rehabilitation*, 35, 1026–1032. doi:10.3109/09638288.2012.717584
- Marques, S. C., Lopez, S. J., Fontaine, A. M., Coimbra, S., & Mitchell, J. (2015). How much hope is enough? Levels of hope and students' psychological and school functioning. *Psychology in the Schools*, 52, 325–334. doi:10.1002/pits.21833
- Martin, L., & Cobigo, V. (2011). Definitions matter in understanding social inclusion. *Journal of Policy and Practice in Intellectual Disabilities*, 8, 276–282. doi:10.1111/j.1741-1130.2011.00316.x
- McFarlane, A. H., Neale, K. A., Norman, G. R., Roy, R. G., & Streiner, D. L. (1981). Methodological issues in developing a scale to measure social support. *Schizophrenia Bulletin*, 7, 90–100. doi:10.1093/schbul/7.1.90
- McPherson, B. D. (1999). Population aging and leisure in a global context: Factors influencing inclusion and exclusion within and across culture. *World Leisure & Recreation*, 41, 5–10. doi:10.1080/10261133.1999.9674153
- Moffitt, T. E., Caspi, A., Taylor, A., Kokaua, J., Milne, B. J., Polanczyk, G., & Poulton, R. (2010). How common are common mental disorders? Evidence that lifetime prevalence rates are doubled by prospective versus retrospective ascertainment. *Psychological Medicine*, 40, 899–909. doi:10.1017/S0033291709991036
- Morgan, C., Burns, T., Fitzpatrick, R., Pinfold, V., & Priebe, S. (2007). Social exclusion and mental health: Conceptual and methodological review. *British Journal of Psychiatry*, 191, 477–483. doi:10.1192/bjp.bp.106.034942
- Morrison, A. P., French, P., Lewis, S. W., Roberts, M., Raja, S., Neil, S. T., . . . Bentall, R. P. (2006). Psychological factors in people at ultra-high risk of psychosis: Comparisons with non-patients and associations with symptoms. *Psychological Medicine*, 10, 1395–1404. doi:10.1017/S0033291706007768
- Muthén, B., & Christofferson, A. (1981). Simultaneous factor analysis of dichotomous variables in several groups. *Psychometrika*, 46, 407–419.
- Muthén, L. K., & Muthén, B. (1998–2010). *Mplus user's guide. Version 6*. Los Angeles: Author.
- Norem, J. K., & Chang, E. C. (2002). The positive psychology of negative thinking. *Journal of Clinical Psychology*, 58, 993–1001. doi:10.1002/jclp.10094
- Norman, R. M. G., Windell, D., Lynch, J., & Manchanda, R. (2012). Correlates of subjective recovery in an early intervention program for psychoses. *Early Intervention in Psychiatry*, 7, 278–284. doi:10.1111/j.1751-7893.2012.00371.x
- Parr, H., Philo, C., & Burns, N. (2004). Social geographies of rural mental health: Experiencing inclusions and exclusions. *Transactions of the Institute of British Geographers*, 29, 401–419. doi:10.1111/j.0020-2754.2004.00138.x
- Prenoveau, J. M., Zimbar, R. E., Craske, M. G., Mineka, S., Griffith, J. W., & Rose, R. D. (2009). Evaluating the invariance and validity of the structure of dysfunctional attitudes in an adolescent population. *Assessment*, 16, 258–273. doi:10.1177/1073191108324519
- Priebe, S. (2007). Social outcomes in schizophrenia. *British Journal of Psychiatry*, 191, s15–s20. doi:10.1192/bjp.191.50.s15
- Rector, N. A. (2013). CBT for medication-resistant psychosis: Targeting the negative symptoms. In C. Steel (Ed.), *CBT for schizophrenia: Evidence-based interventions and future directions* (pp. 87–108). Chichester: Wiley.
- Renner, F., Schwarz, P., Peters, M. L., & Huibers, M. J. H. (2013). Effects of a best possible-self mental imagery exercise on mood and dysfunctional attitudes. *Psychiatry Research*, 30, 105–110. doi:10.1016/j.psychres.2013.10.033
- Robinson, C., & Schumacker, R. E. (2009). Interaction effects: Centering, variance inflation factor, and interpretation issues. *Multiple Linear Regression Viewpoints*, 35, 6–11.
- Safran, J. D., & Segal, Z. V. (1996). *Interpersonal processes in cognitive therapy*. New York: Basic Books.
- Saltzberg, J. A., & Dattilio, F. M. (1996). Cognitive techniques in clinical practice. *Guidance & Counseling*, 11, 27–31.
- Sayce, L. (2001). Social inclusion and mental health. *Psychiatric Bulletin*, 25, 121–123. doi:10.1192/pb.25.4.121
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147–177. doi:10.1037/1082-989X.7.2.147
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *Journal of Educational Research*, 99, 323–338. doi:10.3200/joer.99.6.323-338
- Schunk, D. H., & Meece, J. L. (2006). Self-efficacy development in adolescence. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 71–96). Greenwich, CT: Information Age.
- Secker, J., Hacking, S., Kent, L., Shenton, J., & Spandler, H. (2009). Development of a measure of social inclusion for arts and mental health project participants. *Journal of Mental Health*, 18, 65–72. doi:10.1080/09638230701677803
- Shah, J. Y., & Kruglanski, A. W. (2000). Aspects of goal networks: Implications for self-regulation. In M. Boekaerts, M. Zeidner, & P. R. Pintrich (Eds.), *Handbook of self-regulation* (pp. 86–108). San Diego, CA: Academic Press.
- Slade, M. (2010). Mental illness and well-being: The central importance of positive psychology and recovery approaches. *BMC Health Services Research*, 10, 26. doi:10.1186/1472-6963-10-26
- Smith, N., Lister, R., Middleton, S., & Cox, L. (2005). Young people as real citizens: Towards an inclusionary understanding of citizenship. *Journal of Youth Studies*, 8, 425–443. doi:10.1080/13676260500431743
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13, 249–275. doi:10.1207/S15327965PLI1304_01
- Snyder, C. R., Irving, L. M., & Anderson, J. R. (1991). Hope and health. In C. R. Snyder & R. Donelson (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 285–305). Elmsford, NY: Pergamon Press.
- Snyder, C. R., Lehman, K. A., Kluck, B., & Monsson, Y. (2006). Hope for rehabilitation and vice versa. *Rehabilitation Psychology*, 51, 89–112. doi:10.1037/0090-5550.51.2.89
- Spandler, H. (2007). From social exclusion to inclusion? A critique of the inclusion imperative in mental health. *Medical Sociology Online*, 2, 3–16.

- Steenkamp, J.-B. E. M., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, 25, 78–107. doi:10.1086/209528
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, 52, 83–110. doi:10.1146/annurev.psych.52.1.83
- Sympson, S. (1999). *Validation of the Domain-Specific Hope Scale* (Unpublished doctoral thesis, University of Kansas).
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education.
- Tanaka, J. S. (1987). "How big is big enough?": Sample size and goodness of fit in structural equation models with latent variables. *Child Development*, 58, 134–146. doi:10.2307/1130296
- Thoemmes, F., MacKinnon, D. P., & Reiser, M. R. (2010). Power analysis for complex mediational designs using Monte Carlo methods. *Structural Equation Modeling*, 17, 510–534. doi:10.1080/10705511.2010.489379
- Tonge, J., Mycock, A., & Jeffery, B. (2012). Does citizenship education make young people better-engaged citizens? *Political Studies*, 60, 578–602. doi:10.1111/j.1467-9248.2011.00931.x
- Valmaggia, L. R., Stahl, D., Yung, A. R., Nelson, B., Fusar-Poli, P., McGorry, P. D., & McGuire, P. K. (2013). Negative psychotic symptoms and impaired role functioning predict transition outcomes in the at-risk mental state: A latent class analysis study. *Psychological Medicine*, 43, 2311–2325. doi:10.1017/S0033291713000251
- Vázquez, C., & Ring, J. M. (1993). Altered cognitions in depression: Are dysfunctional attitudes stable? *Personality and Individual Differences*, 15, 475–479. doi:10.1016/0191-8869(93)90077-G
- Weidman, A. C., Fernandez, K. C., Levinson, C. A., Augustine, A. A., Larsen, R. J., & Rodebaugh, T. L. (2012). Compensatory internet use among individuals higher in social anxiety and its implications for well-being. *Personality and Individual Differences*, 53, 191–195.
- Weissman, A., & Beck, A. T. (1978). *Development and validation of the Dysfunctional Attitudes Scale*. Paper presented at the annual conference for the Association for Advancement of Behavior Therapy, Chicago
- Wellman, B. S., & Berkowitz, S. D. (1988). *Social structures: A network approach*. New York: Cambridge University Press.
- Whisman, M. A., & Friedman, M. A. (1998). Interpersonal problem behaviors associated with dysfunctional attitudes. *Cognitive Therapy and Research*, 22, 149–160. doi:10.1023/a:1018728322555
- Widaman, K. F., & Reise, S. P. (1997). Exploring the measurement invariance of psychological instruments: Applications in the substance use domain. In K. J. Bryant & M. Windle (Eds.), *The science of prevention: Methodological advances from alcohol and substance abuse research* (pp. 281–324). Washington, DC: American Psychological Association.
- Wilbert, J., & Rupert, P. (1986). Dysfunctional attitudes, loneliness, and depression in college students. *Cognitive Therapy and Research*, 10, 71–77. doi:10.1007/bf01173384
- Wong, Y.-L. I., & Solomon, P. L. (2002). Community integration of persons with psychiatric disabilities in supportive independent housing: A conceptual model and methodological considerations. *Mental Health Services Research*, 4, 13–28. doi:10.1023/a:1014093008857
- Wood, A. M., & Tarrier, N. (2010). Positive clinical psychology: A new vision and strategy for integrated research and practice. *Clinical Psychology Review*, 30, 819–829. doi:10.1016/j.cpr.2010.06.003
- Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, 139, 53–80.